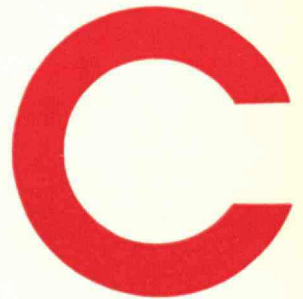


Technology Review

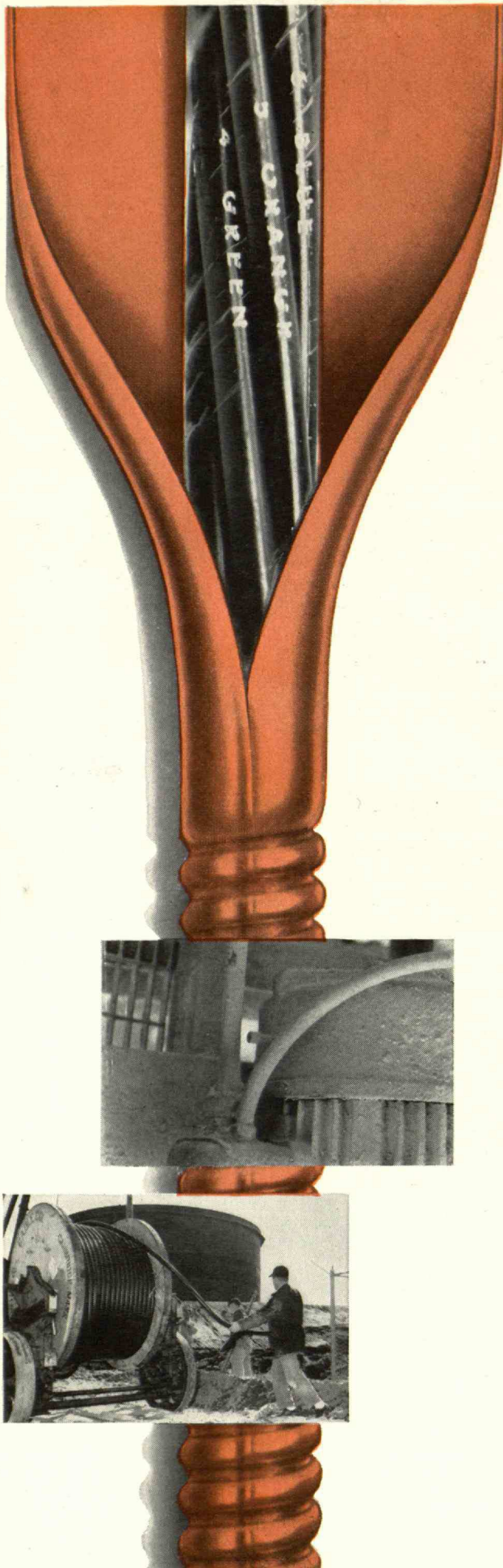
Edited at the Massachusetts Institute of Technology May 1961



technology review

Published by MIT

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Only **C-L-X**[®]
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Sealed Cable Systems by **Simplex** Can do so Many Jobs so Well

Simplex C-L-X is a packaged combination of cable and an extremely pliable, corrugated metal sheath. It requires no separate duct or conduit regardless of environment. It is available with steel sheath and plastic jacketing; and with copper or aluminum sheaths, with or without plastic jacketing.

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By using a single length of 3-conductor 15KV C-L-X for both underground and aerial use, a Southeastern utility company saved more than 20,000 dollars from what it would have cost for a complete underground duct system.

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Conduit life in this company's calcium chloride reclamation building was only 6 to 9 months. The conduit was replaced with a C-L-X cable system which — after two years of operation, shows no signs of deterioration.

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An East Coast petroleum tank farm used a C-L-X 8-conductor cable protected with PVC for direct burial in ground that was saturated with oil, gas and water. Result: Perfect performance at a sizeable savings over conduit systems.

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All on a beam of light!

**New Bell Telephone discoveries suggest
light as a future carrier of vast numbers of
telephone calls, TV shows, data messages!**

Bell Telephone scientists recently transmitted the human voice for the first time on a beam of "coherent" infrared light.

To do this they used their new Optical Maser—a revolutionary device which may someday make light a new medium for telephone, TV and data communications.

Here's why:

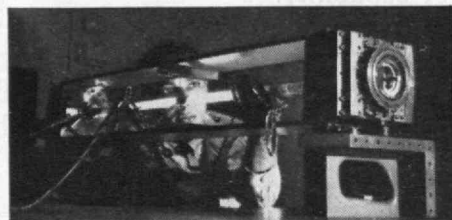
Light waves vibrate tens of millions of times faster than ordinary radio waves. Because of these high frequencies, light beams have exciting possibilities for handling enormous amounts of information.

Ordinary light waves—the kind put out by your living room lamp—move like an unruly mob. Coherent light waves move like disciplined soldiers. Theoretically they can be controlled, directed and modulated just as radio waves are now.

The possibilities are breath-taking. Light beams might be transmitted through long pipes, or could someday be just what

are needed for communications in space—for example, between space ships.

Many other uses for coherent light beams are being thought of as Bell Laboratories experiments go forward. Continuing research like this requires adequate telephone company profits so that we can bring you the latest service improvements at the earliest possible time and the lowest possible cost.

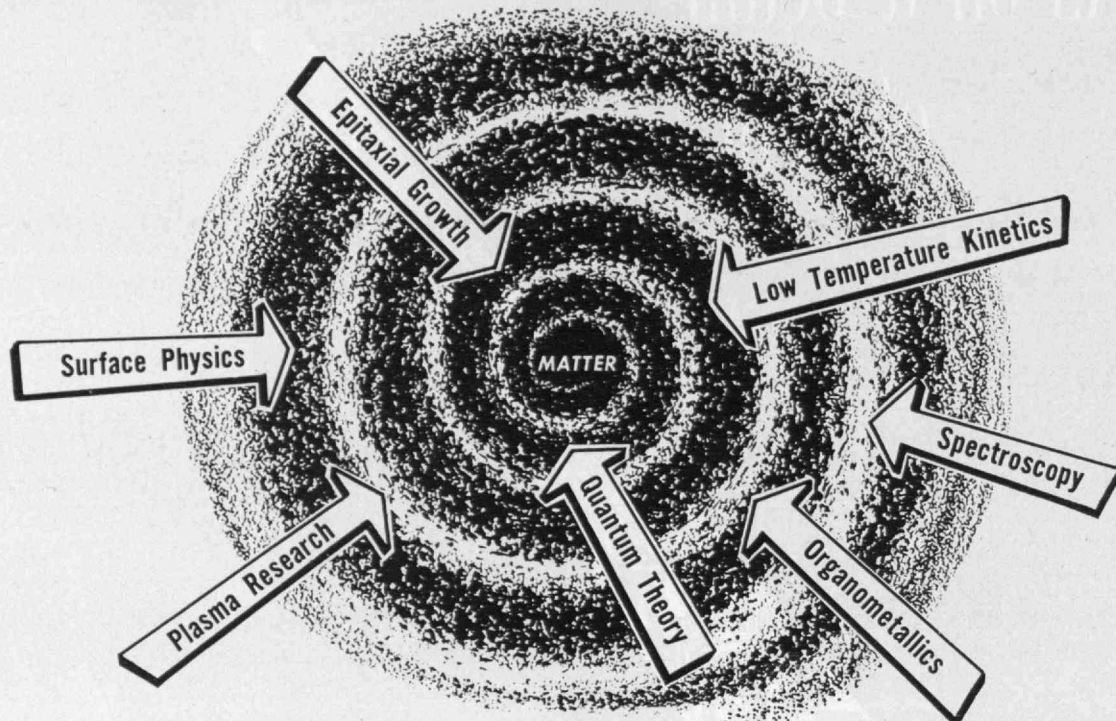


Bell Laboratories scientist adjusts new Optical Maser model, first such that operates continuously. Maser uses very little power, transmits narrowest light beam ever achieved. Name stands for "Microwave Amplification by Stimulated Emission of Radiation."



BELL TELEPHONE SYSTEM

THE BREADTH AND DEPTH OF MELPAR: PROJECT PROBE



Project Probe consists of the division of research activity that slices horizontally through the areas of pure and applied physical, biological and engineering sciences. The basic philosophy of the program rests on the premise that only by such cross-disciplinary investigations and by a deep penetration into the fundamentals of science will true advances in electronics be forthcoming.

Melpar Project Probe is not restricted to a fixed family of products, but aims at expansion of knowledge and improvement of capability.

Melpar is seeking scientists and engineers with creative ability and scientific curiosity to participate in any one of the areas of this Probe.

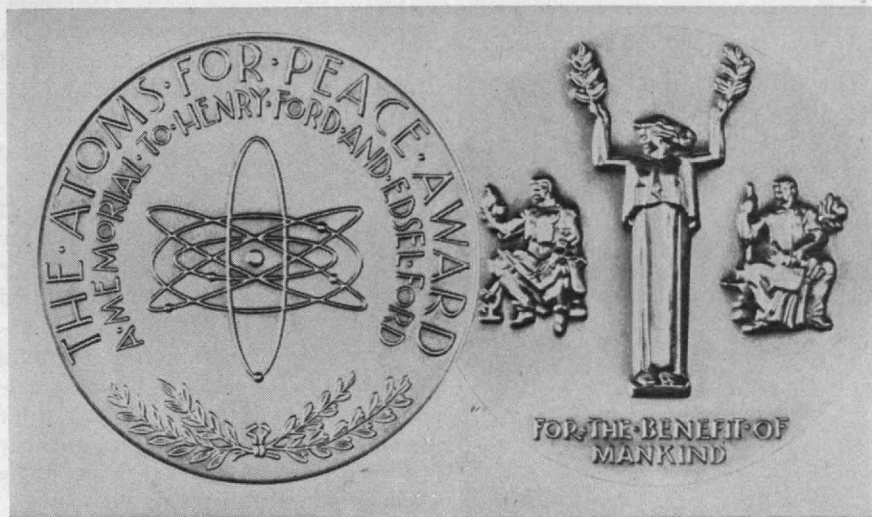
INDICATIVE OF THE AREAS OF ACTIVITY PRESENTLY BEING PURSUED IN PROJECT PROBE ARE:

Bionics	Heterogeneous Reactions
Basic Metallurgy	Electrochemistry
Basic Ceramics	Millimeter Wave Research
Crystal Physics	Neurophysics
Cryogenics	Acoustics
Communication Research	Stellar Phenomenon
Data Processing Research	NMR
High Temperature Measurements	Solid State Physics
High Pressure Physics	Magnetohydrodynamics
Logic Connectives	Adaptive Programming
Mathematical Circuit Synthesis	Microbiology
Mathematics	Microwave Optics
Pattern Recognition	Enzymology
Physical Chemistry	Upper Atmosphere Physics
Organic Chemistry	Optics
Semiconductor Physics	Oceanography
Radiochemistry	Electromagnetics
Thin Film Physics	ESR
Inorganic Chemistry	Masers
Lasers	Biochemistry
Speech Compression	Biophysics
Infra-Red Research	Biology

Scientists and engineers who are interested in participating in MELPAR: PROJECT PROBE, are invited to write to F. J. Drummond, 3339 Arlington Boulevard, Falls Church, Virginia.

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A Subsidiary of Westinghouse Air Brake Company



THE ATOMS FOR PEACE AWARD—the gold medallion shown above and a \$75,000 honorarium—was presented to Sir John Cockcroft during the observance of M.I.T.'s Centennial. Sir John was honored for promoting the use of isotopes, developing reactors, and advancing international co-operation.

Feedback

An Embarrassing Error

FROM JOHN C. ADAMS, JR., '48:

Since the middle part of last summer, I have known that something was wrong, but was not fully aware of what had happened until I turned to page 55 of the March, 1961, edition of your publication and noted my name in the deceased column, effective August 1, 1960.

Having solved this problem, however, a few additional problems have resulted. For example, if they decide to challenge the Marblehead vote in the recent presidential elections, they will find that someone has voted a gravestone name. More important perhaps to me personally is the fact that I have foolishly paid my 1960 income taxes on income received after August 1.

In all seriousness, I thought I had best advise you that I am very much alive and kicking and hope to remain status quo.

6 Elmwood Road
Marblehead, Mass.

[The Review apologizes to John Cecil Adams, Jr., '48, the author of the above letter, for omitting the middle name of John Curtis Adams, Jr., '48,

of Fort Worth, Texas, whose death was reported to the Alumni Office.]

Kind Words Department

FROM CHARLES W. HOLZWARTH, '49:
I find I am reading The Technology Review and circulating it among my associates.

Please keep up the good work with your new format and content.

National Lock Company
Rockford, Ill.

EDITOR: Volta Torrey; BUSINESS MANAGER: R. T. Jope, '28; CIRCULATION MANAGER: D. P. Severance, '38; EDITORIAL ASSOCIATES: J. J. Rowlands, Francis E. Wylie, John I. Mattill; EDITORIAL STAFF: Ruth King, Muriel R. Roberts, Pauline Gates; BUSINESS STAFF: Madeline R. McCormick, Marianne G. Hagerty; PUBLISHER: H. E. Lobdell, '17.

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Second-class postage paid at Concord, N. H.

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A hat similar to those shown in Fifteenth Century Venetian paintings was designed by Mrs. Helen Bottomly of the Department of Humanities for the Marshals at M.I.T.'s Centennial Convocation.

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Individuals Noteworthy



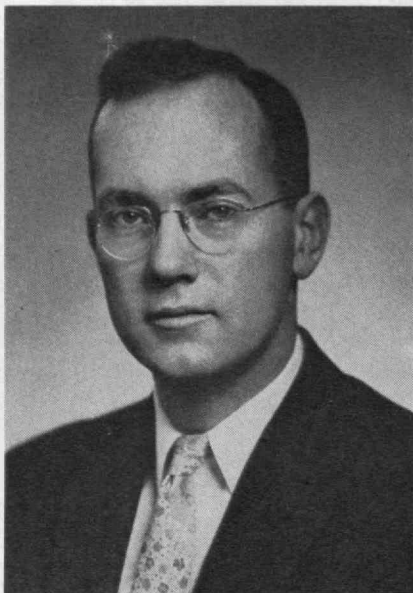
George John Leness, '26

Corporation Member

THE ELECTION of George John Leness, '26, as a life member of the M.I.T. Corporation was announced on March 22 by Chairman James R. Killian, Jr., '26. Mr. Leness is the newly elected president of Merrill, Lynch, Pierce, Fenner and Smith, Inc., in New York, and previously served on the M.I.T. Corporation as an alumni term member, from 1949 to 1954.

Mr. Leness has been with his present firm since 1943, when he joined it as a general partner and head of the Underwriting Department. He became vice-president and chairman of the Executive Committee in 1959. He was previously associated with Harris Forbes and Company, Chase Harris Forbes Corporation, and the First Boston Corporation. He makes his home at 1185 Park Avenue in New York, and is a director of the Sinclair Oil Corporation and the Beekman Downtown Hospital.

Mr. Leness received a degree from Harvard as well as M.I.T., and is a member of Delta Tau Delta and Tau Beta Pi fraternities. His clubs include the M.I.T. Club of New York, the University Club, the Brook, and the Down Town Association.



Charles Hard Townes

M.I.T.'s New Provost

CHARLES H. TOWNES will fill the re-established Office of Provost at M.I.T., starting next fall. As Provost, he will be the senior academic officer reporting to the President and share responsibility with the President for general supervision of the Institute's research and educational programs. He will work directly with the Deans in furthering the programs of the several Schools, and will have primary concern for all inter-School activities, including the new interdisciplinary research centers.

A native of Greenville, S. C., Dr. Townes received his first degrees from Furman University and Duke University and his doctorate in physics at the California Institute of Technology in 1939. He then joined the technical staff of the Bell Telephone Laboratories, where he remained until his appointment to the faculty at Columbia University. At Columbia he later served as executive director of the Columbia Radiation Laboratory and chairman of the Department of Physics.

Dr. Townes is a member of the National Academy of Sciences, a fellow and member of the Council of the American Physical Society, a

member of the American Philosophical Society, a senior member of the Institute of Radio Engineers, and of other professional and learned societies. He has been a Sigma Xi national lecturer, a Guggenheim fellow, and a Fulbright lecturer at the University of Paris and the University of Tokyo.

He has received the Comstock Award of the National Academy of Sciences, the Morris Liebmann Memorial Prize of the Institute of Radio Engineers, the Stuart Ballantine Medal of the Franklin Institute, and, most recently, the Rumford Premium of the American Academy of Arts and Sciences. He is editor of *Quantum Electronics*, published last year by the Columbia University Press, and the author of more than 100 books and scientific papers. His most widely known work relates to the theory and application of masers, on which he holds the fundamental patent.

Dr. Townes is currently on leave from his post as professor of physics at Columbia and is serving as vice-president and director of research for the Institute for Defense Analyses in Washington.

Faculty Promotions

THE EXECUTIVE COMMITTEE of the Corporation has approved the promotions of the following members of the Faculty to the rank of associate professor:

Judson R. Baron, '48, Aeronautics;

Amar G. Bose, '51, Electrical Engineering;

Gene M. Brown, Biology;

Gordon L. Brownell, '50, Nuclear Engineering;

Steven A. Coons, '32, Mechanical Engineering;

Peter S. Eagleson, '56, Civil Engineering;

Merton C. Flemings, Jr., '51, Metallurgy;

Moise H. Goldstein, Jr., '51, Electrical Engineering;

Martin Greenberger, Industrial Management;

Elias P. Gyftopoulos, '58, Nuclear Engineering;

Sigurdur Helgason, Mathematics;

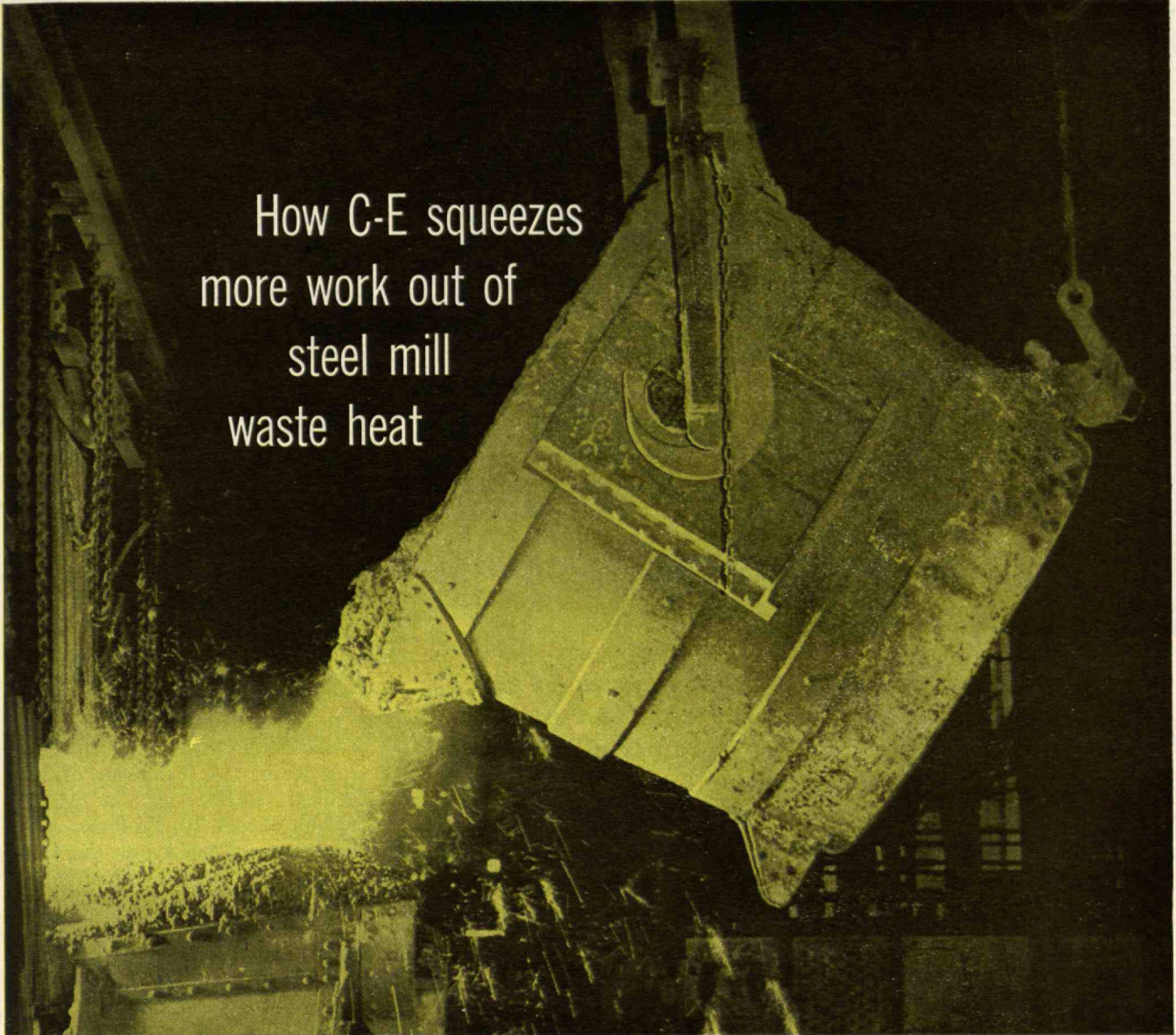
Kerson Huang, '50, Physics;

Kenneth A. Johnson, Physics;

Daniel M. Kan, Mathematics;

Jerome Y. Lettvin, '47, Biology;

(Continued on page 6)



How C-E squeezes more work out of steel mill waste heat

Heat energy released in open hearth furnaces helps make more than 80 per cent of America's steel. In the process, much unused heat is discharged in the form of very hot gas from the open hearth exhaust.

Many kinds of waste heat boilers have been applied to the outlets of open hearths but their primary function has not been the efficient use of this excess heat energy. Rather, it has been their purpose to reduce the exhaust temperature so that the gas could be effectively cleaned in dust collectors prior to its discharge to atmosphere.

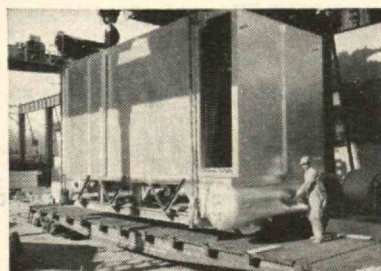
Combustion Engineering, experienced in the use of all kinds of marginal fuels and waste heat, and realizing the potential worth of open hearth gas as a power source, designed its Waste Heat Controlled Circulation Boiler—a truly efficient unit which makes *maximum* use of the tremendous energy in this gas.

Utilizing C-E's Controlled Circulation principle, this boiler will produce greater quantities of steam from a given volume of gas—and at more efficient working pressures and

temperatures. It will handle this highly corrosive exhaust routinely, and with minimum maintenance.

It can be tailored to fit difficult space conditions. In short, it is a dependable and efficient source of low cost power which, in the process of doing more work, effectively cools the gas so that it may be cleaned.

Squeezing more work out of waste is a finely developed art at C-E. No matter its source, Combustion believes there is no such thing as *waste* heat—only *wasted* heat.



A C-E Controlled Circulation Waste Heat Boiler, Type WCC, being shipped to a major midwestern steel mill. One of a number installed at this mill, it utilizes the heat energy in open hearth exhaust gas to provide dependable, low cost steam power.

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LINCOLN LABORATORY

Massachusetts Institute of Technology

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Individuals Noteworthy

(Continued from page 4)

John McCarthy, Electrical Engineering;

Arthur P. Mattuck, Mathematics;

Bruce Mazlish, Humanities;

Marvin L. Minsky, Mathematics;

Stanislaw Olbert, '53, Physics;

Franklin P. Peterson, Mathematics;

Irwin A. Pless, Physics;

Robert O. Preusser, Architecture;

Ernest Rabinowicz, Mechanical Engineering;

Norman C. Rasmussen, '56, Nuclear Engineering;

Richard D. Thornton, '54, Electrical Engineering;

Wallace E. Vander Velde, '56, Aeronautics;

Zenon S. Zannetos, '55, Industrial Management.

Joseph Kaye: 1912-1961

A NOTED AUTHORITY on generation of electricity directly from heat, Joseph Kaye, '34, Professor of Mechanical Engineering at M.I.T., died on March 20. Professor Kaye had been associated with the Institute since 1939, and was co-inventor of a thermo-electron engine.

Born in Malden, he received both his bachelor's degree and doctorate at M.I.T. and was for two years an A. D. Little post-doctorate fellow in chemistry. He became a research assistant in the Division of Industrial Cooperation in 1939, instructor in Mechanical Engineering in 1940, director of the Research Laboratory of Heat Transfer in Electronics in 1952, and a professor in 1955.

He collaborated on the production of *The Thermodynamic Properties of Air* (1945), and *Gas Tables* (1948), and was co-author of *Direct Conversion of Heat into Electricity* (1960). He was a fellow of the American Academy of Arts and Sciences and a member of several professional and honorary societies.

Professor Kaye is survived by his wife, Ida; his parents, Mr. and Mrs. Nathan Kaminsky; two brothers, Dr. Abraham Kaye and David Kaye; a sister, Mrs. Rose Levitts; and four sons, Leonard, Harvey, Sidney, and Charles, all of Boston.

(Continued on page 8)

Outstanding New Books from McGraw-Hill

INTRODUCTORY SYSTEM ANALYSIS: Signals and Systems in Electrical Engineering

By WILLIAM A. LYNCH, and JOHN G. TRUXAL, Polytechnic Institute of Brooklyn. The McGraw-Hill Electrical and Electronic Engineering Series. Ready now.

This work, the first of a two volume sequence, has been prepared primarily for the undergraduate course in Introductory Electrical Engineering and focuses attention to linear system analysis, electronic circuits and analog simulation and computation. A handy reference for practicing engineers seeking an introductory treatment of linear system analysis.

EXPERIMENTS IN HEARING

By GEORG VON BEKESY, Harvard University. McGraw-Hill Series in Psychology. \$25.00

An eminent international psychologist and physicist makes available to physiologists and psychologists the results of his unique ground-breaking experiments in the field of hearing. Over the years, von Bekesy has created his own experiments and has established physiological and neurological facts concerning hearing which have advanced this field considerably. The book is based on most of the papers published by the author during the last 30 years.

SPACE ASTROPHYSICS

By WILLIAM LILLER, Harvard College Observatory. Ready now.

This book is the product of a lecture series given at the University of Michigan Department of Astronomy during the 1959-60 academic year on the aspects of astronomy and astrophysics which are concerned with or can be studied from outer space. Many of these lectures by leading space scientists are made available to students and scientists here for the first time.

HEAT TRANSFER

By BENJAMIN GEBHART, Cornell University. 454 pages, \$10.75.

A senior level text and reference book containing a description of the physical processes, theories, and methods of analysis in the field of heat transfer. The theories and fundamental formulations of the three modes of heat transfer are followed by phase change processes, combined mode analysis, exchange design, and analogues. The physical nature of heat transfer processes is emphasized.

THEORY OF MACHINES

By JOSEPH E. SHIGLEY, University of Michigan. The McGraw-Hill Mechanical Engineering Series. Ready in June, 1961.

This is a combination volume of the author's KINEMATIC ANALYSIS OF MECHANISMS and his DYNAMIC ANALYSIS OF MACHINES (both available separately.) This is a junior-level text to bridge the gap between engineering mechanics courses and the professional courses in mechanical design. The tools of dynamic analysis are studied and used to synthesize and analyze the motions, velocities, and accelerations of many mechanisms. Then, a more useful tool is introduced, the three-dimensional unit vector approach, for the solution of space mechanisms.

METEOR SCIENCE AND ENGINEERING

By D. W. R. MCKINLEY, National Research Council, Ottawa, Canada. Ready in May, 1961.

A technically sound and highly interesting review of the study of meteors slanted toward the radio engineer. Major emphasis is placed on the interesting and useful connections that have developed in recent years between the modern science of radio and the small flying particles known as meteors.

CONTROL OF NUCLEAR REACTORS AND POWER PLANTS. Second Edition

By M. A. SCHULTZ, Engineering Manager, Westinghouse Testing Reactor, Waltz Hill, Pennsylvania. 462 pages, \$12.50.

A revision and up-dating of a unique book concerned with the use of servomechanism techniques as a method for the control of a nuclear power plant. The new material includes concepts that have arisen since the original publication, and the author has made some of the original ideas more applicable by including material on reactors other than the pressurized water type. Basic control problems of all types of reactors from homogeneous reactors to boiling reactors are handled.

SCIENCE IN SPACE

By L. V. HERKNER, Graduate Research Center, Inc., Dallas; and HUGH ODISHAW, National Academy of Sciences—Space Science Board. 458 pages, \$7.00.

This new book comprehensively discusses the opportunities and problems presented by space. Much of the book is devoted to an exploration of the interests and needs of research in physics, astronomy, geophysics and geology, and the biological sciences.

SEMICONDUCTOR DEVICES AND APPLICATIONS

By RICHARD GREINER, University of Wisconsin. The McGraw-Hill Electrical and Electronic Engineering Series. Ready in May, 1961.

An advanced work explaining how diodes and transistors function and are used in circuits. A thorough discussion of the properties of semiconductors and junctions leads into an analysis of the transistor operation. Extensive application of the transistors to a variety of signal circuits, a detailed description of switching effects and switching circuits, and many completely worked example problems are included.

ELECTROMECHANICAL SYSTEM THEORY

By HERMAN E. KOENIG, Michigan State University; and WILLIAM A. BLACKWELL, General Dynamics Corporation. The McGraw-Hill Electrical and Electronic Engineering Series. Ready in July, 1961.

This pioneering work introduces into the literature of engineering a "discipline of lumped-parameter system analysis." This discipline is based on an expanded concept of conventional electrical network theory, and thereby brings into the domain of E. E. analysis a vastly broader scope of problems. The book develops the discipline, and shows specifically how a single set of engineering concepts is applied to the analysis of a wide variety of mixed systems.

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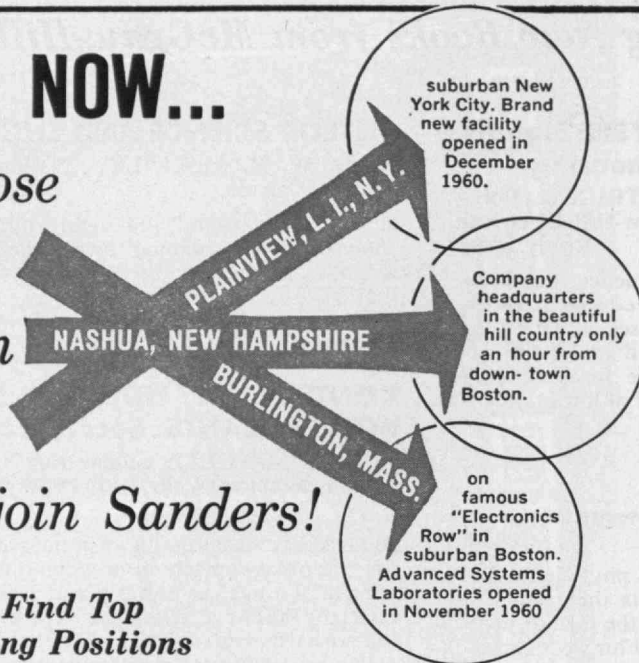
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Individuals Noteworthy

(Continued from page 6)

James McGowan: 1886-1961

A LIFE MEMBER of the M.I.T. Corporation, James McGowan, Jr., '08, died in Philadelphia on March 15. Mr. McGowan joined the Campbell Soup Company in Camden, N. J., as a chemist when graduated from the Institute and became its president in 1946 and chairman of its Board in 1950. He was born in Scotland on February 8, 1886.

He became an alumni term member of the M.I.T. Corporation in 1947, was elected a life member in 1952, and served on four Visiting Committees of that body.

He was a trustee of the Nutrition Foundation, Inc., a member of the Institute of Food Technologists, and at one time chairman of the executive committee of the National Canners Association. He also served on the advisory board to the Research and Development Branch, Military Planning Division of the Office of the Quartermaster General; and at the time of his death was a director of the Pennsylvania-Reading Sea Shore Lines and of the Philadelphia Manufacturers Mutual Insurance Company.

Mr. McGowan is survived by his widow, Elizabeth McGowan, and a son, James P. McGowan.

(Continued on page 46)

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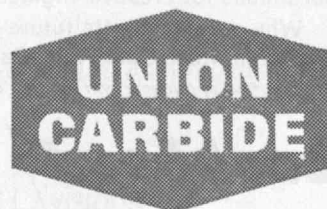
The 70,000 people of Union Carbide operate more than 400 plants, mines, mills, laboratories, warehouses, and offices in the United States, Canada, and Puerto Rico. With these vast resources and skills, and the help of 35,000 suppliers, they create a variety of products in the fields of metals, carbons, gases, plastics, and chemicals.

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**...a hand
in things to come**



Said Isaac Newton:

"Every particle of matter attracts every other particle with a force directly proportional to the product of their masses and inversely proportional to the square of the distances between them."

Until recently, the thrust which propelled rocket vehicles into their coast stage, prior to orbiting, was provided by booster stages. The fuel carried by the satellite stage was used only to inject itself into orbit.

Now, however, a scientist at Lockheed Missiles and Space Division has evolved a Dual Burning Propulsion System which allows higher orbits and heavier payloads. With this system, the satellite vehicle fires immediately after the last booster stage burns out, thus augmenting the begin-coast speed. Later the satellite stage is re-started to provide orbit injection.

An even more recent development by Lockheed is a triple-burning satellite stage. This will permit a precise 24-hour equatorial orbit, even though the vehicle is launched a considerable distance from the equator.

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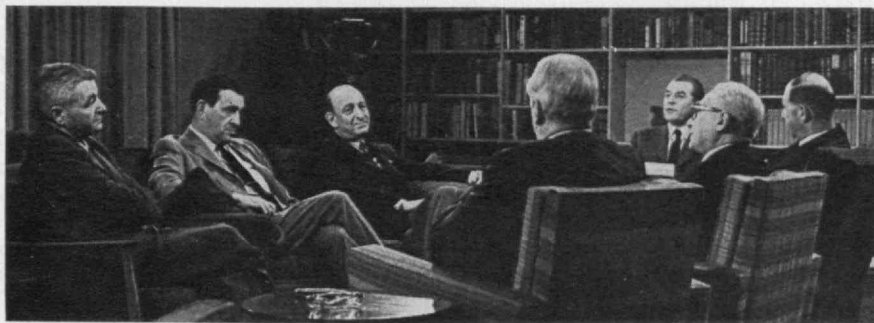
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Trend Of Affairs



The Institute Celebrates Its 100th Birthday

DEDICATED "to truth through science, proud of its concern for useful knowledge, and alive to a new order of ethical and social responsibilities," the Massachusetts Institute of Technology entered its second century last month. Those were the closing words of President Julius A. Stratton, '23, at the Centennial Convocation on April 9 in the Rockwell Cage—the climactic event of a three-day celebration of the 100th anniversary of the granting of the Institute's charter.

Throughout the three days scholars and statesmen debated the ends as well as the means of life in a world polarized around science. Speaker after speaker stressed the Institute's role as one of the world's most renowned places of education, and called on it for still greater contributions in its next century.

Prime Minister Harold Macmillan of Great Britain asked, in one of the weekend's memorable addresses, "Will man's destiny be fulfilled when once all men can satisfy their material needs?" The debate, he noted, goes on around the world.

"We are caught," said Secretary of State Dean Rusk, "in a period when a world we have known is disappearing and a world we are creating is just coming into being. . . . The language of science and scholarship eases transcultural discourse."

Ten thousand Alumni participated on campus in the observance of the Centennial, and more than 200 universities and scientific bodies, a fourth of them in foreign lands, were represented in the academic procession that preceded the Centennial Convocation.

President Kennedy's Message

SIR WINSTON CHURCHILL cabled his congratulations to the Institute and President Kennedy tape-recorded a message that Alumni and the Institute's guests heard at the banquet on the eve of the Convocation.

"We live at a time," said Mr. Kennedy, "when the old international tradition of the university is uniquely important. The Western universities originally derived their international tradition from their connection with the church. They now derive it because the world of ideas and the world of science are essentially international. If we are to produce the kind of world required for the safety and well-being of the human beings who live in it, we must build on this international tradition. . . . We must learn as national societies what the sci-

entists already know—that the relations among men in the end must be as open as the relations now are between men of science."

James R. Killian, Jr., '26, Chairman of the Corporation, who presided at both the Convocation and the Alumni banquet, spoke on a similar theme. "M.I.T. opened its doors at the end of the Civil War and played its part in the great release of energy and growth that followed," he recalled. "May we not hope that our second century will see early in its course a similar opportunity, this time on the scale of the world community?"

Mr. Macmillan's Appeal

THE ADDRESS of Prime Minister Macmillan was a call for "a wider unity transcending traditional barriers" in the Western Alliance.

"The best, the cheapest, and the most sensible" road to security, he declared, would be genuine disarmament, but until it is achieved it is imperative that the Free World have a deterrent that is effective without being wasteful. The nuclear deterrent, he continued, is not yet so organized as to contribute fully to our unity, and the health of the NATO alliance requires that a way be found to build a partnership in nuclear as well as in conventional fields.

Turning to the market place and classroom, Mr. Macmillan observed that the Free World has three main problems: (1) how to maximize world trade, (2) how to organize assistance and capital to build up the less developed countries, and (3) how to finance an ever-increasing volume of trade and aid.

"We ought," he said, "to work for the largest area of free trade that we can create . . . There ought, ideally, to be a central banking system for all the countries of the Free World . . . Expanding trade needs expanding money . . . The nature of the struggle for the hearts and minds of men is such that no country, not even the greatest, can hope to stand alone."

Seen above, participating in a discussion televised during M.I.T.'s Centennial Week from the President's House, are (clockwise from left) Professors Jerrold R. Zacharias and Jerome B. Wiesner, Raymond C. F. Aron of the University of Paris, Charles Collingwood, Sir Eric Ashby of Cambridge University, Dr. I. I. Rabi of Columbia and Dean John E. Burchard, '23.

(A Christian Science Monitor photo)

The International Conference

FOR FOUR DAYS, prior to the general assemblies held to celebrate M.I.T.'s Centennial, scholars and leaders in many disciplines, from many nations, met to ponder problems of scientific and engineering education, the interactions of science and engineering with society, and the implications for international relations. Their discussions were summarized for Alumni and friends of the Institute at the first general assembly by members of the M.I.T. Faculty.

In opening this assembly, Dean John E. Burchard, '23, chairman of the Centennial, explained that the Institute now feels a triple obligation: "To help to advance the boundaries of scientific knowledge, to help put this knowledge to work, and, most difficult of all, to help to see to it that the outcome of the work is benign."

Professor Max Millikan, Director of the Center for International Studies, reported on the discussion of the newly developing nations' problems. These countries, he said, require a wide spectrum of scientific and engineering talent, and the key bottleneck in meeting their needs now appears to be the lack of adequate personnel to assist them.

Professor Martin Deutsch, '37, of the Department of Physics, reporting on discussions of the advanced countries' problems, said the need for engineers had been especially emphasized, and that it was felt that the increasing complexity and rapidity of developments in engineering "would change the face of engineering education in all of the advanced countries."

Professor Elting Morison of the School of Industrial Management was the reporter for conferees concerned with interactions of science, engineering, and society. They felt, he said, that the rate of change was "the most significant fact about the world today," and had asked him to convey to the Centennial audience "a sense of the excitement of living in at least two different cultures, three different countries, and four stages of history, all at the same time."

Walter A. Rosenblith, Professor of Communications Biophysics, concluded these reports with a review of the implications of science and engineering in international relations. The conferees on this topic, he said, had lamented the lack of support for such organizations as the International Council of Scientific Unions, and had pointed out that CERN (The European Organization for Nuclear Research) represents "a new kind of international institution."

The Secretary of State, Dean Rusk, re-emphasized points made in the international conference in his address at a general assembly. To a considerable extent, he said, foreign policy is in the hands of people themselves, and the "international community of science and scholarship" plays an important role in our foreign relations.

Historically, Dean Rusk noted, human needs have been a cause for war, but now nations and peoples seem to be pinning their hopes on science and technological developments. Hence, he argued we must make, "tolerable advances." We are committed, he said, "to a job of building," and to succeed we must "elevate our sights as to the role of education."

In The Review Next Month

FURTHER REPORTS on the events arranged to observe M.I.T.'s Centennial, including the full text of Prime Minister Harold Macmillan's address, President Stratton's response to the greetings, and reports on the panel discussions prior to the convocation, will be published in the June and July issues of The Review—with many photographs.

The Solar Wind Is Found

A CLIMAX to much work in the Laboratory for Nuclear Science at M.I.T. came this spring when Explorer X detected a "solar wind." It consists of electrically neutral streams of magnetized, ionized particles apparently emitted from the sun in masses which interact with interplanetary magnetic fields, and this wind was found with a plasma probe designed and assembled at the Institute. The probe was carried about 140,000 miles from the earth in a satellite launched March 25 from Cape Canaveral.

The 78-pound satellite also carried magnetometers from the Goddard Space Flight Center, which revealed the existence of considerably stronger magnetic fields than had been expected at distances beyond 60,000 miles from the earth.

Interactions between the plasma and these fields are on a scale that cannot be duplicated on earth. Hence, they interest not only communications engineers and prospective space travelers, but all physicists, cosmologists, meteorologists, and other scientists whose work involves magnetohydrodynamics.

The findings of the instruments on Explorer X were transmitted to tracking stations around the world for nearly 60 hours, although the batteries which powered the transmitter had been expected to last only about 55 hours. The Blossom Point, Md., Minitrack Station's records were the first ones examined, and a "quick look" at them was sufficient to indicate to the scientists directing the experiment that it had been successful. Further analysis of the abundant harvest of data is under way.

The plasma probe was built by Herbert S. Bridge, '50, Frank Scherb, '53, and Alan J. Lazarus, '53, of the Laboratory for Nuclear Science, and Ervin F. Lyon, 3d, '59, of Lincoln Laboratory. Professor Bruno Rossi, the Institute's internationally known expert on cosmic rays, directed the interplanetary plasma project, and the National Aeronautics and Space Administration's project manager for the shot was Dr. James P. Heppner of the Goddard Space Flight Center.

This was the first of two experiments in space this spring which were planned at the Institute.

Tuition Increase in 1962

STUDENTS were notified this spring that tuition at M.I.T., which is now \$1,500, will be increased to \$1,700 in the summer of 1962, to raise salaries of the teaching staff. Tuition still will cover less than one-half the cost of educating each student. "M.I.T.," President Stratton pointed out, "must support a salary schedule that is on a par with the best of other educational institutions."

The World's Greetings

THERE were 600 marchers in the academic procession that Chief Marshal David Allan Shepard, '26, led across Massachusetts Avenue when the trumpets sounded on April 9 for the Centennial Convocation. Mr. Shepard carried the mace and wore a new scarlet robe and hat, designed for the occasion, and the gowns and hoods of nearly all the world's great schools were in the line of march behind him. The day was fair, and in addition to the throng present thousands saw the procession on television.

Mrs. Karl Taylor Compton gave the invocation. Greetings to the Institute then were delivered from the Commonwealth of Massachusetts by Governor John A. Volpe; from American universities, by President Harlan H. Hatcher of the University of Michigan; from foreign universities, by Professor John Fleetwood Baker of the University of Cambridge; from students, by Joseph Harrington, 3d, '61; from Alumni, by their Association's President Clarence L. A. Wynd, '27; and from the Faculty, by Institute Professor John Clarke Slater. The response of the Institute was given by President Stratton.

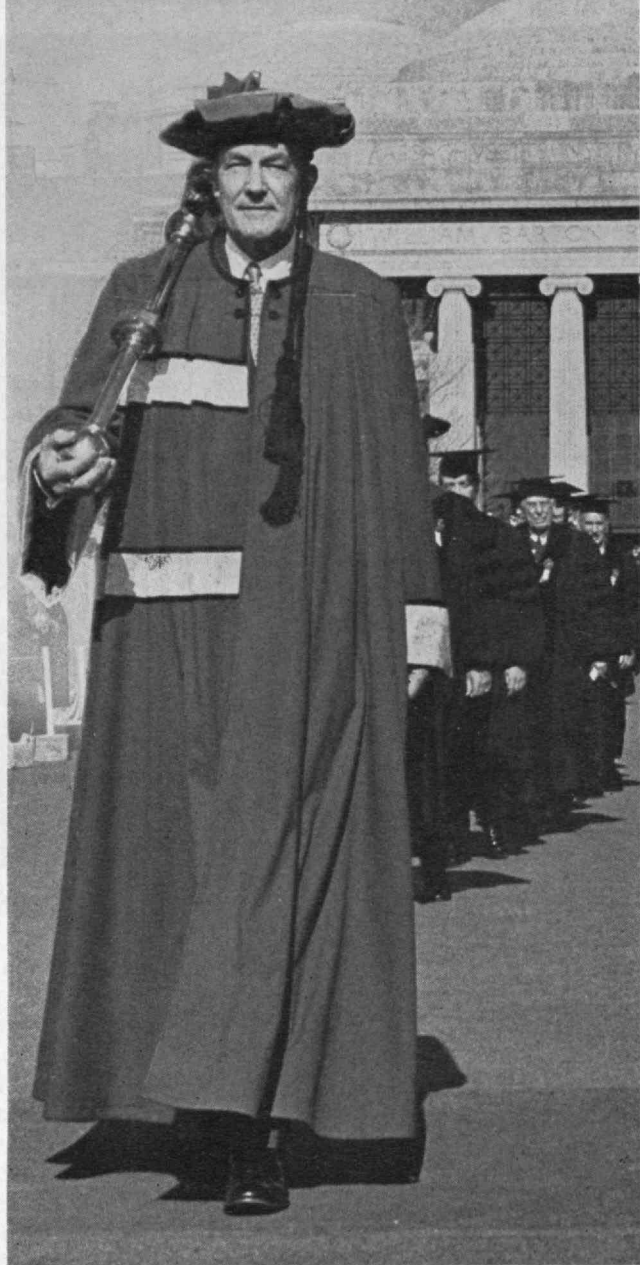
Music for the occasion by the M.I.T. Concert Band, the Choral Society, and the Boston Brass Ensemble included a Centennial Overture written by Gregory Tucker, Associate Professor of Music, and fanfares composed by Andrew Fenton Kazdin, '57.

An Intellectual Feast

ATTENDANCE at M.I.T. Centennial events reached a peak on Saturday morning, April 8, when panels of scholars discussed how science has changed man's view of himself, the future of the arts in a world of science, and the future of the physical sciences.

That afternoon other panels considered the difficulties of arms control, the life of man in industry, and the future of the life sciences.

Because of the throng interested in the discussions of science, two of the groups were transferred from the Compton Lecture Hall to the Armory. Closed-circuit



Chief Marshal Shepard, '26, led scholars from every part of the world in the Centennial academic procession on April 9.

television carried the proceedings to tents pitched near the Kresge Auditorium, and to many of the Institute lounges. A large TV screen in the Kresge Auditorium proved especially attractive to many unable to obtain seats up front in the Cage.

The Salute to Mr. Sloan

SECOND CENTURY FUND leaders at M.I.T. for the Centennial ceremonies honored Alfred P. Sloan, Jr., '95, their honorary chairman, at a breakfast in the Statler, and heard that approximately half of the \$66,000,000 being sought had already been pledged.

An unscheduled speaker was the President's Special Assistant for Science and Technology, Jerome B. Wiesner, who pointed out that the problems he faces from the White House have long been considered at M.I.T. Others who spoke included President Stratton, John J. Wilson, '29, general chairman of the Fund, and Philip H. Peters, '37, chairman of the Fund's Area Organization.



Vannevar Bush, '16, Alfred P. Sloan, Jr., '95, James McCormack, '37, and John J. Wilson, '29, at the Convocation.



President Julius A. Stratton, '23, and Institute Professor Norbert Wiener—a symbol of excellence to his M.I.T. colleagues.

The Legend of Norbert Wiener

FOR 42 of the Institute's first 100 years, Institute Professor Norbert Wiener has been a familiar figure in its corridors and a dominant one in its traditions. This spring, on his return from Europe, his colleagues in the Department of Mathematics, the Research Laboratory of Electronics, and the Center for Communications Sciences, gave him and Mrs. Wiener a silver bowl "in recognition of his outstanding service to M.I.T. and the world of science."

President Julius A. Stratton, '23, joined them in recalling "those long equations that started over here and went all the way around," and in praising his enormous productivity, the great variety of his interests, and his concern for the social implications of science and mathematics.

William Ted Martin, Head of the Department of Mathematics, stressed the high, hard standards set by Professor Wiener in mathematical work, his emphasis on the importance and dignity of the individual, and his discernment of a central, unifying theme in all branches of mathematics and the relations of mathematics to other fields of science and engineering.

Jerome B. Wiesner, President Kennedy's science adviser, speaking for the Research Laboratory of Electronics, referred to Professor Wiener as "the conscience" of his group, and Professor Peter Elias, '44, pointed out that Professor Wiener had contributed to "a good half of what electrical engineers are interested in nowadays."

The American Mathematical Society was represented by Professor Richard Brauer, chairman of the Department of Mathematics at Harvard, and the Institute of Radio Engineers by its retiring President, Ronald L.

McFarlan. In a telegram read by Professor Walter A. Rosenblith, the International Brain Research Organization announced the election of Professor Wiener to honorary membership.

"It is difficult," said Dr. Stratton, "to grasp the really extraordinary changes that have taken place in the Institute, not only in its size, laboratories, buildings, and budget, but in its character. Through these changes, M.I.T. has evolved from a rather small institution with a particular motivation to what we may, quite clearly, call a scientific university. And during this whole period of change and transition, Norbert Wiener has stood as a symbol of all we thought best in the academic world."

Planning for Venezuela

THE GOVERNMENT of Venezuela has arranged for research and technical assistance from the Joint Center for Urban Studies of M.I.T. and Harvard in developing the Guayana region. This area near the confluence of the Orinoco and Caroni rivers has been called the Ruhr of South America because of its great natural resources. Some 45,000 persons already have moved into the region in anticipation of its development. A steel mill to be managed by Koppers is being built and an aluminum plant, a petrochemical plant, and other factories are being planned now.

A new city of 200,000 or more is expected to rise and the Joint Center will help determine the requirements for housing, industry, and public services in this city as well as in the region as a whole. It will examine problems of public and private financing, study the region's potential, and analyze its probable pattern of growth. Work will begin both in Venezuela and Cambridge as soon as a project director has been appointed.

Future Men and Machines

AS A CONTRIBUTION to the observance of M.I.T.'s Centennial, the School of Industrial Management is presenting eight lectures this spring on "Management and the Computers of

the Future." Here are short reports on the first of these lectures. All will be published later in book form. The last four lectures in the series are to be given this month in Kresge Auditorium at M.I.T.

A Computer Console For Every Freshman?

THE ULTIMATE ROLE of the computer as handmaiden to scholarly university activities can be far greater than it is now, Professor Alan J. Perlis, '49, contended in the first lecture of an M.I.T. Centennial Series on "Management and the Computer of the Future." Professor Perlis, who was a research mathematician with "Project Whirlwind" at M.I.T. in the 1940's, is now director of the Computation Center at the Carnegie Institute of Technology and chairman of the American committee on ALGOL (algorithmic language), an international programming language.

A university graduate, he said, in opening this lecture series, should have received "training directed to the development of sensitivity, rationality, and an intelligent table look-up procedure. The first, as the poet MacLeish has so aptly said, is for the development of a feeling for the meaning and relevance of facts. The second, for the development of fluency in the definition and manipulation of convenient structures, experience and ability in choosing representations from the study of models, and self-assurance in the ability to work with large systems. The third, of course, is the catalogue of facts and problems which give meaning and physical reference to man's role in society.

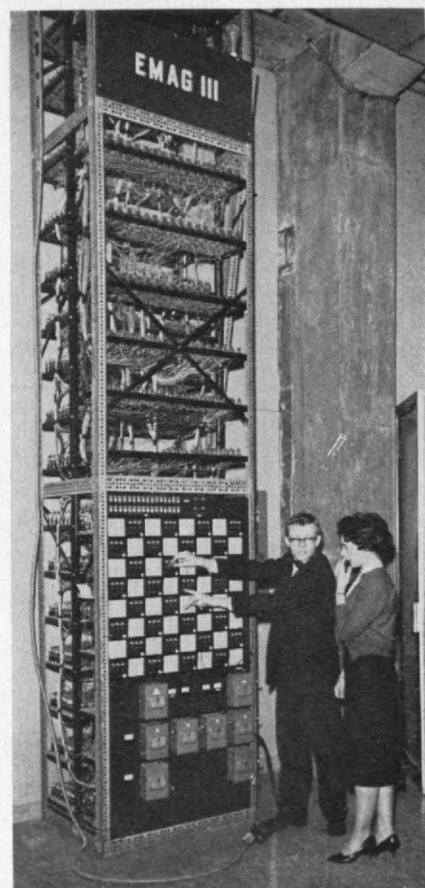
"While the computer may conceivably play a small role in the development of human sensitivity, it is quite critical to the other developments. Indeed, no other mechanical instrument combines so

well the theoretical and practical balance necessary to these developments."

More than 100 high-speed electronic computers already are at work in American universities and more are being installed. They are used mainly for computations in research programs. "With only a few users does the computer itself—or more precisely, the insight it takes to use it—invest a deeper interpretation of the development being studied," Professor Perlis said. "In general, graduate students' contact with the computer merely sharpens differences in ability among them already noted from other evidence. The intellectually sublime become more poetic on the computer, while the dull become what can only be called monumental machine bores."

To make better use of computers as teaching devices, the lecturer advocated that engineering and science students be brought into contact with them as college freshmen, and liberal arts students as sophomores. The introductory course he envisages, moreover, would be technical and not purely descriptive. "At least in engineering and science freshman programs," Professor Perlis maintained, "This course should share with Mathematics and English the responsibility of developing literacy, while Physics and Chemistry develop the background toward which this literacy is to be applied."

What should the student be taught about programming in such



SOME FRESHMEN have brought their own computers to M.I.T. This one, which plays checkers, is now in Boston's Museum of Science. David Ecklein, '63, its builder, is shown explaining it to a museum visitor.

a course? Professor Perlis suggested that it cover such fundamentals as parametrization, iteration, recursion, definitions, a priori attention to eventualities regardless of likelihood, representation, mechanical language, simulation, and proof.

In such a course, he continued, it would be important that the student be graded quickly and guided. Computers now can do the grading

in a generally satisfactory way. They cannot yet do a good job of identifying mistakes in programming and isolating sources of misunderstanding, but there is no reason they could not be made to employ diagnostic information acquired while grading to produce corrective problem sequences.

"Both explanatory text and problem statements may be individually printed for each student through a high-speed printer," he suggested. "More importantly, the grading program can maintain counts of the frequency of use of text branches, so that sensible improvements can be made in the organization of the net of problems and solutions."

At Carnegie Tech, Professor Perlis reported, a program causing a computer to behave like a teaching machine is currently being developed to teach the syntax of a programming language.

"The first and most critical stage of the computer's role in the university, it seems, is clear," he said. "It is to train entering students in the theory of computation through the development of the concepts of programming. To do this the computer plays a partner's role with the teacher in sequencing the student through a set of problems . . .

"At the completion of this first course, the student should be able to recast his learning of, say, calculus so as to be able to devise mechanical methods for a computer to differentiate elementary expressions and quite naturally to make the separation between the introduction and consequence of definitions and the mechanical manipulation he does so much of. The concept of the teaching program for calculus should not only appear natural but so should the planning procedure for accomplishing it. To be sure, maturity in relating mathematical developments, e. g., that of algebra and calculus in the integration of rational functions, is still not developed; but such as it is the maturity will be applied to an intellect already attuned to the rationale of process definition and synthesis."

Students, he predicted, would attack with interest the problem of creating a technician within the computer to do mechanical analysis. Such a technician could do "the dirty work" in the tiresome manipulations required by many problems.

The programming language needed to make the computer such a technical aid will require more flexible notational abilities than any now extant, Professor Perlis said, but should be developed in university computing centers.

Of course, he added, the computer must have such salient features as high-speed, multiple inputs and outputs, and large random access storage units. Remote consoles also will be needed, so that many

students may have simultaneous access to a machine.

Professor Donald G. Marquis introduced Professor Perlis and presided over a lively discussion in which Professor Peter Elias, '44, emphasized the importance of efforts to adjust machines to people, and J. C. R. Licklider suggested that better poetry will be written some day in the language of digital computers than ever has been written in English.

How Will Computers Affect Management?

ENTERPRISE ENGINEERS soon will be the men most in demand by industry, Professor Jay W. Forrester, '45, said in the second of the School of Industrial Management's series of Centennial Lectures on management and computers.

Professor Forrester viewed industrial organizations from a perspective between that of the psychologist concerned with individuals and the economist viewing events from afar, and described managerial decision-making as a feed-back system similar to those found in electrical and biological systems.

"The manager," he said, "is a person to whom information flows and from whom come streams of decisions which control actions within the organization. Management success depends primarily on what information is chosen and how the conversion is executed . . .

"An industrial organization is a complex interlocking network of information channels. These channels emerge at various points to control physical processes such as the hiring of employees, the building of factories, and the production of goods. Every action point in the system is backed up by a local decision point whose information sources reach out into other parts of the organization and surrounding environment . . . The regenerative process is continuous and new results lead to new decisions which keep the system in continuous motion."

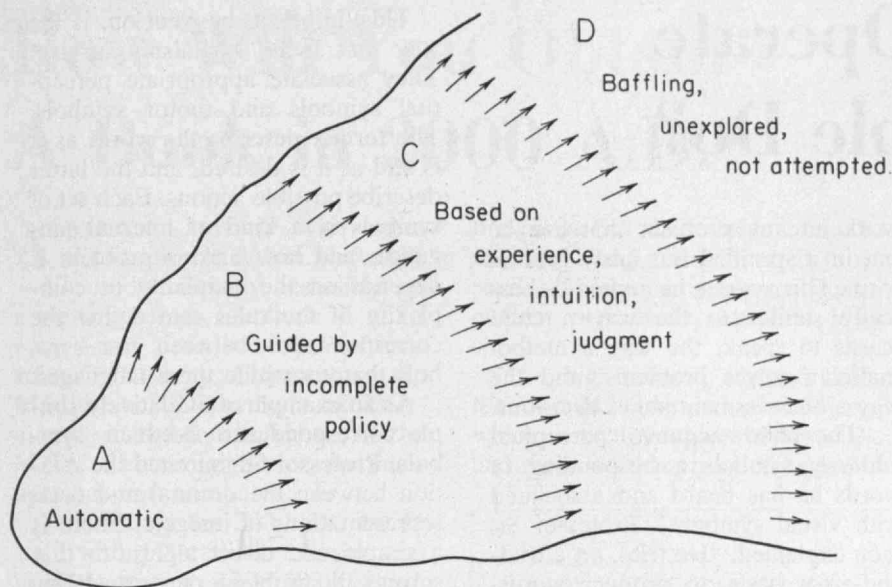
At the decision points, he continued, men see the apparent state

of actual conditions and attempt to bring them closer to desired conditions, but the entire process is "highly nonlinear and noisy."

Much of the literature of economics deals with the policy followed at decision points, and much of history and literature devotes itself to the basis of policy which causes the human decision-maker to react in a reasonable and expected way to his environment. "In physical systems, particularly in the field of servomechanisms, the corresponding term is 'transfer function,'" said Professor Forrester. "The transfer function tells how the output of a particular box depends on the stream of inputs. . . .

"In industrial organizations, some policy is very formal. But informal policy may be every bit as influential. It depends on habit, conformity, social pressures, ingrained concepts of goals, awareness of power centers within the organization, and personal interest."

From Professor Forrester's perspective, management decisions can be classified according to the form of controlling policy. Some decisions such as those based on rules for accounting and giving shipping instructions already are made on a fully automatic basis by machines, and this area is expanding. A second category of decisions, made by a vast bureaucracy of middle management, consists of those based on well-understood policy which have not yet been mechanized. In a third category are decisions, usually made nearer the top levels of the



The boundaries between decision regions move out and upward.

organization, where action is based on experience, intuition, and judgment. And beyond these there is a region of great challenge where no basis of action in either experience or intuition is really known.

"The dividing lines between these regions are not sharp," he said. "The gradation from the automatic decision to the one that lacks even a basis in experience and intuition is one of continuous and gradual transition. The dividing zones between regions, however, are moving upward and outward."

The middle regions immediately above those where decisions are completely formal, he continued, are not such obscure and subtle jungles as they often seem. "If we can understand the mechanisms of a social system," he explained, "we can construct effective and useful dynamic models of its operation. These models open the way to what is essentially a management laboratory."

"The design of a corporation with its organization structure and its managing policies can be brought to a level not unlike that of the design of an airplane with its wind tunnel and its aircraft models. It opens the way to what we might call 'enterprise engineering' for the design of organizations to meet specific objectives and goals."

Is there any reason to do this?

"One can point to the large number of new industrial enterprises which are founded but to fail," Professor Forrester answered. "On the other hand, there are those which

begin and flourish with a growth rate of as high as 50 or 100 per cent per year. When the range in dynamic behavior is this great, there must indeed be some fundamental underlying reasons for success which can be better understood."

We have, he continued, tremendous examples of accomplishments in the understanding of military control systems in the last decade, and some preliminary examples of what can be done by the same approaches to industrial systems. In the next level of progress in economic development, he believes, art and intuitive judgment will be applied to the development of a better understanding of policy.

"This does not imply automatic management," he emphasized. "A better understanding of decision-making policy and its information-feed-back content will not reduce the demands on the executive. Quite the reverse. He will have new methods to use and a new theoretical underlying structure to understand, and the more skillfully these tools are selected and the more significant the goals, the more effective will be the application."

"New advances in physics have not led to automatic engineering. The skilled system engineer still produces the better chemical process or earth satellite."

"We can see, however, that the emphasis in the corporation will change. Recognition of the importance of policy can be expected to spread very rapidly . . . There

will be a thinning out of the present middle management operation. Much of the middle management structure is made up of frustrating and unrewarding tasks. As these tasks are better understood, it will no longer be necessary to squander the talents of good men in these positions.

"The analogy to the physical product production line is excellent: As the production process became routine, two things happened. Work on the production line became unrewarding. Also, once the tasks were fully understood, it became possible to design machines which would serve the function as well and not suffer boredom. . . .

"At the stage which we are now entering, the art of machine design is being formalized into logical rules. We can call this the automation economy. At this level, man designs methods and procedures which will permit machines to design machines which in turn will produce for human consumption. We have already taken a substantial step in this direction: Digital computers are today designed by digital computers. Computing machines design mechanical parts and lay out the piping and structure for chemical plants. The creative designer works with the formal concepts that govern how design should be done."

"At the next level, which we might call the 'artificial intelligence' level of economic development, machines will perhaps be instructed in how to develop the design concepts which machines can then follow to produce designs to produce equipment to produce goods for human consumption. . . .

"The manager, in rising to a new level of abstraction where he concerns himself with formal decision-making policy and with enterprise design, will be keeping pace with the evolution of our technological society."

Robert C. Sprague, '23, chairman of the Sprague Electric Company, presided on the occasion of this lecture and the discussants were Professors Charles C. Holt, '43, of Carnegie Tech and Ronald A. Howard, '55, of M.I.T. Much of the discussion dealt with distinctions between the approximately five-year-old science of industrial dynamics and the about 20-year-old science of operations research.

Do Machines Operate The Way People Do?

IT IS no longer debatable whether computers can simulate human thinking, Professor Herbert A. Simon, Associate Dean of the Graduate School of Industrial Administration at the Carnegie Institute of Technology, contended in the third of the M.I.T. Centennial Series of lectures on computers and management in the future.

"A dozen or more computer programs have been written and tested that perform some of the interesting symbol-manipulating, problem-solving tasks that humans can perform and do so in a manner which simulates, at least in some general respects, the way in which humans do these tasks," he said. "Computer programs now play chess and checkers, find proofs for theorems in geometry and logic, compose music, design electric motors and generators, memorize nonsense syllables, form concepts, learn to read . . .

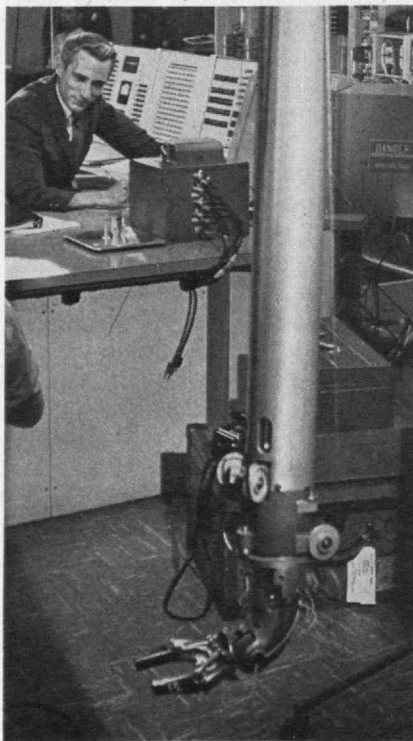
"Computer programs can be written that use non-numerical symbol-manipulating processes to perform tasks which, in humans, require thinking and learning. These programs can be regarded as theories, in a completely literal sense, of the corresponding human processes. These theories are testable in a number of ways: among them, by comparing the symbolic behavior of a computer so programmed with the symbolic behavior of a human subject when both are performing the same problem-solving or thinking tasks."

Professor Simon, who is now on leave of absence with the RAND Corporation, is noted both for work in the social sciences and with computers. He was formerly on the faculty of the Illinois Institute of Technology, and has been the author or co-author of many books, including *Models of Man: Organizations* (1957) and *The New Science of Management Decision* (1960).

Professor Simon's lecture dealt particularly with a program which is called the General Problem Solver because it can employ a system of methods, believed to be those commonly used by college students, to

work on any problem that can be put in a specified but fairly general form. This system, he argued, is basically similar to the way a child learns to speak, the way a mathematician solves problems, and the way a businessman makes decisions.

"The child acquires perceptual auditory symbols corresponding to words he has heard and associated with visual symbols," Professor Simon explained. "He tries, on a trial-and-error basis, to produce words, hears his productions, and compares these auditory symbols with those already stored. When he detects differences, he varies the motor symbols to try to remove them. As he learns, he detects that changes in certain components of the motor symbols alter only certain components of the auditory symbols. Thus he is able to factor the correction process and thereby accelerate it greatly."



A discussion of "What Computers Can Do Better" (on May 22) will conclude the Centennial Lecture series reported on these pages. Shown here with a machine's arm is Professor Claude E. Shannon, '40.

This, in effect, he went on, is the way that living organisms survive. They associate appropriate perceptual symbols and motor symbols. The former describe the world as it is and as it is desired, and the latter describe possible actions. Each set of symbols is a kind of internal language, and how hard a problem is depends on the simplicity or complexity of the rules that define the correspondence between the symbols that constitute these languages.

As an example of a relatively simple correspondence between symbols, Professor Simon cited the relation between the decimal and octal representations of integers. There is a simple and direct algorithm that solves all problems in translating decimal representations into octal representations. But in other cases the correspondence between the vocabularies of two different languages may be purely conventional or arbitrary. Rote learning is the only means of building up a translation dictionary then, and immense amounts of trial-and-error searching may be required.

"The aspects of the environment with which we, as organisms, deal effectively reach neither of these two extremes," Professor Simon said. "The translation between the 'state' language that describes our perceptions of the world and the 'process' language that describes our actions on the world is reducible to no simple rule, but it is not arbitrary. Most of our skill in dealing with the environment is embodied in elaborate heuristics, or rules of thumb, that allow us to factor (approximately) the complex perceived world into highly simple components and to find (approximately and reasonably reliably) the correspondences that allow us to act on the world predictably."

The General Problem Solver program, he concluded, describes the core of these heuristics. Hence, in such a program, he said, we now have a first approximation to what Walter Pitts of M.I.T. has described as "the hierarchy of final causes traditionally called the mind."

Professor Sidney S. Alexander of the School of Industrial Management presided on the occasion of this lecture, and the commentators were Professors George A. Miller of Harvard and Marvin L. Minsky of M.I.T.

How Will You Obtain A Book in 2000 A.D.?

A NATIONAL LIBRARY with more information in it than Harvard's—all almost instantly accessible on a viewing screen hundreds of miles away—was described by Professor John G. Kemeny, Chairman of the Mathematics Department at Dartmouth, in the fourth lecture of the M.I.T. Centennial Series on management and computers.

This library for 2000 A.D. would start with 10 million volumes and possibly grow to 300 million within the Twenty-first Century. Each page of each "book" in it would be stored on possibly a square millimeter of tape. The library would serve 100 or more universities, each of which would have a multitude of viewing screens. Using the library would be similar to making a long distance telephone call: When the patron dialed the correct code number, the reference he wished would appear on his viewing screen.

Such a library will be needed, Professor Kemeny argued, because if the present rate of growth continues our richest universities will be unable to afford building, cataloguing, and serving the kind of libraries they have now. These libraries, he declared, already are practically obsolete, certain to be so by the end of the Twenty-first Century, and will be useless for most purposes by 2000 A.D.

"The library of the future," he said, "will have to make use of automation. There is no conceivable way in a library of several tens of millions of volumes that human effort could locate an item in a matter of minutes. . . . Storage methods must miniaturize books and put them on a medium easily handled by machines."

Even though an automated national library might cost a billion dollars, he continued, it should be able to serve a great many universities in all parts of the country—and do so more economically than they could all maintain separate libraries of their own.

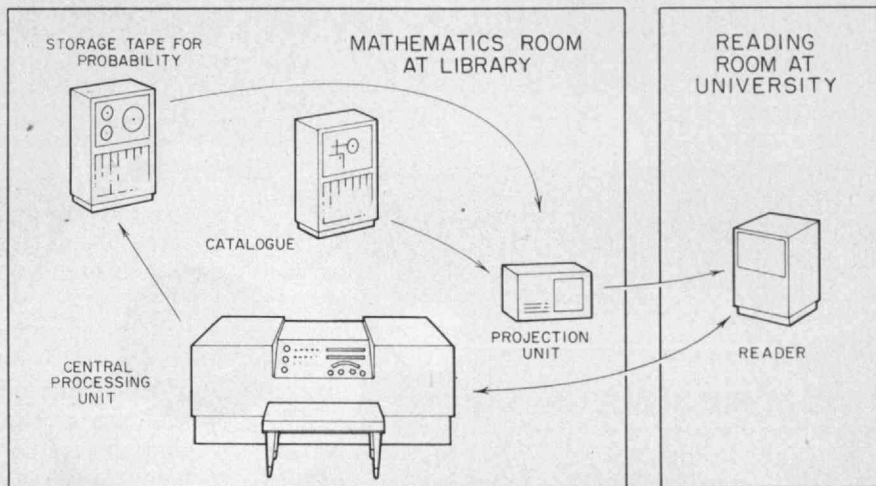
Of course, Professor Kemeny conceded, some readers would object to being deprived of the pleasures of

browsing. But their needs could be met by having a few hundred thousand old-fashioned reference works, current periodicals, etc., on local shelves.

The big national library's contents would be divided into subjects, which in turn would have branches, and these would consist of items, all

In addition to describing such a library, Professor Kemeny discussed the problem of assisting the researcher searching the literature on a given topic. By dialing information, he suggested, the national library's patrons might be put in touch with an information-searching machine. This, however, is an aspect of the problem which Professor Kemeny feels still calls for considerable study.

"I find the concept of such a library very attractive," he said. "I am basically a lazy person. I would like to sit in my office and have ac-



A book on probability may sometime reach you via this route.

having code names. ABC-12-34567-89, for example, might be what you would dial to get Item Number 89 in Volume 34567 of Branch 12 of Subject ABC. But suppose you got a busy signal?

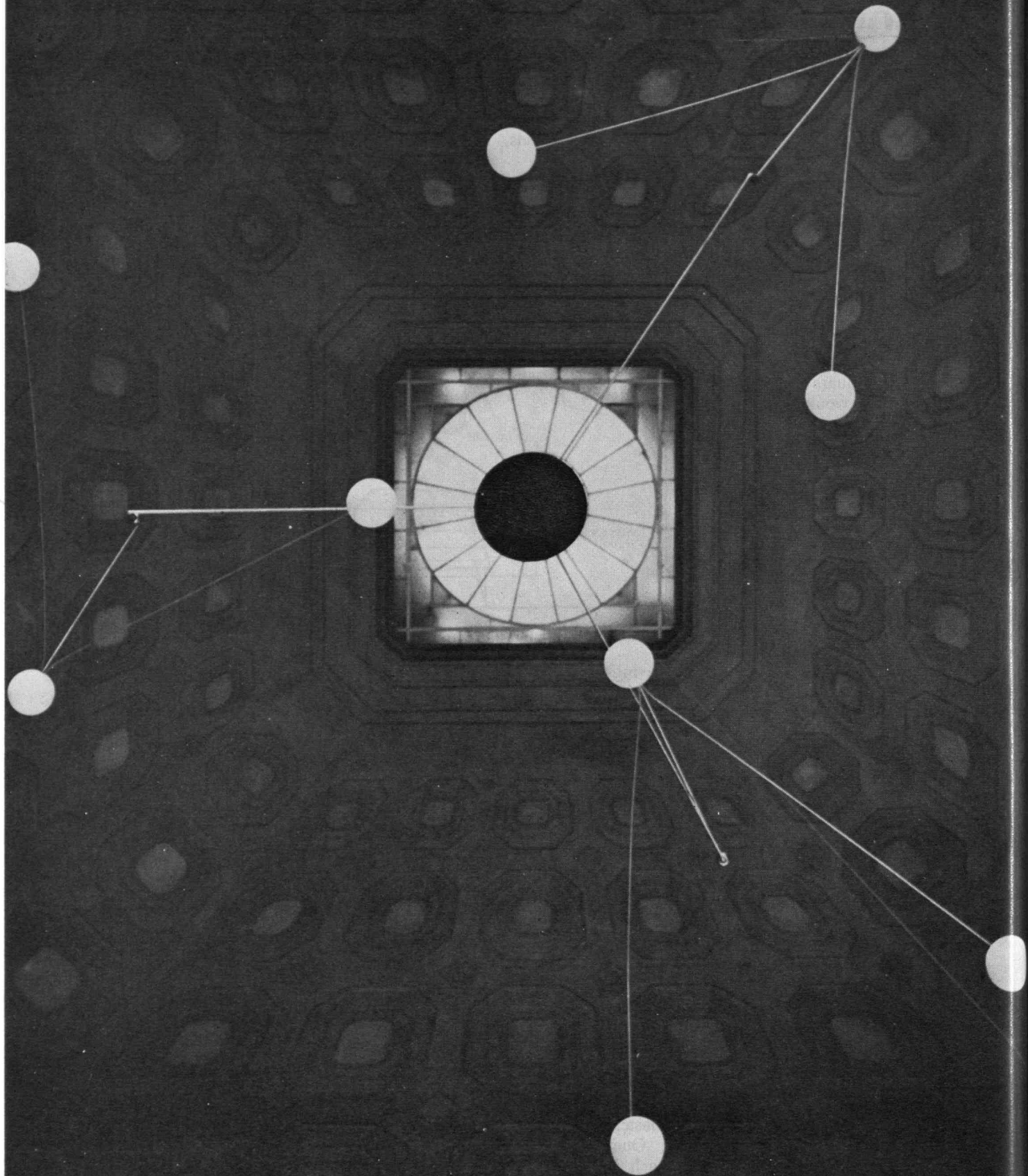
Professor Kemeny would reduce that possibility by not allowing customers to use items directly from the files. Instead, each person requesting a book would receive a copy of it. The item asked for would be transferred from the storage tape to a projection unit and sent, conveniently magnified, to a tape in the reading unit of the person desiring it. With \$10 worth of tape, a customer could have a 10-volume collection of personally selected items; and if he tired of them, he could simply erase the tape and have a new set of books flashed to him from the master tapes in the central library.

One day of each month, however, each branch of the central library might have to be closed for updating, extension, and repair of its master tapes. This, of course, would be only a slight inconvenience.

cess to a book with no more trouble than calling a friend on the phone long-distance. . . . We would get busy signals less often than the frequency with which the book we are looking for is out of our library today. And we could arrange our calling system so that we could hold on and obtain access to a storage tape as soon as it was freed—which should be within minutes.

"I am particularly attracted to the prospect of combining this automated library with machine-search. . . . It is possible that, even with all this elaborate mechanization, information retrieval will become hopeless in 100 years—but without mechanization we won't have a ghost of a chance."

Professor William N. Locke, Director of Libraries at M.I.T., presided during this lecture and the discussion which followed. Commentators on the idea included Professor Robert M. Fano, '41, and Gilbert W. King, '33, Director of Research for IBM. The daily newspapers paid special attention to this lecture.



A University's Proper Heritage

BY ARTHUR R. VON HIPPEL

THE technical competence and political maturity of a country are reflected in the methods and policies it adopts for the use and safeguard of nature's resources. Much has been learned and much destroyed in the passing industrial age motivated largely by thought of immediate gain, without much concern for life on this planet. Only the rapid progress of science and technology rescued our civilization again and again from critical impasses of its own making.

Our understanding has advanced sufficiently in many fields to attempt a synthesis of knowledge and to foresee in wider perspective the consequences of our actions. Scientists and engineers, previously confined to airtight subdivisions, are discovering in molecular concepts a basis of true alliance. Economists, ecologists, and medical doctors are experiencing the exciting advantages of group co-operation. The growth of interdepartmental research centers and interdepartmental teaching has begun to transform our universities. As their new students enter the various professions, they will help to break old prejudices and will cause society to act under wider horizons.

The creation of interdepartmental research centers is more than an act of administrative decision. It requires the clear formulation of new goals, the recognition of new forms of organization implementing this vision, and—last not least—faculty groups eager and able to undertake the new venture. In the field of materials science and technology the formation of an interdepartmental center at M.I.T. approaches realization. It is necessary, therefore, to sharpen the general concepts advanced previously into clear proposals that can become the subject of faculty debate and administrative action. This paper, in summarizing a private opinion on this issue, hopes to enliven the debate.

Mayo Clinic of Materials Research?

American and English law finds guidance by precedent. A precedent in organizing effective co-operation between specialists has been set by the medical profession. Cause and effect of this recent development will give some guidance for our action.

Medicine, in contrast to the trend toward synthesis mentioned above, moves toward extreme specialization. A revolutionary advance in detailed knowledge pours from about 900 medical journals in the U.S. and many others in the rest of the world. Experts

A Center for Materials Science and Technology at the Institute should rekindle the spirit of adventure, comradeship, and joy in discovery

FEW MEN are as well qualified as Professor von Hippel, Director of the Laboratory for Insulation Research at M.I.T., to speak of the problems and potentialities of interdepartmental research centers. He has done so in previous articles for The Review (See, "Molecular Engineering," March, 1956; "Answers to Sputnik?" March, 1958; and "Universities in Transition," April, 1959). In this article he points out similarities and differences between modern requirements in medicine and those in the field of materials science and technology.

have divided between themselves the functions of body and mind into about 36 specialties. The general practitioner, utterly unable to compete with their instrumentation, tests, and concentrated experience, is dying out. Still, his integrating common sense is sorely needed.

The solution to this dilemma was found in group practice, pioneered and brought to awe-inspiring perfection by the Doctors Mayo and their clinic. The skyscrapers of the Mayo Clinic, set on the prairie of Minnesota, house hundreds of medical doctors representing all specialties, supported by an army of about 1500 assistants, technicians, nurses, etc. Every day about 500 new patients enter this "Diagnostic Center of the Medical World" and leave a few days later with the most exhaustive analysis of their state of health that modern medicine can provide. The findings, integrated under the individual care of a doctor of internal medicine, recommend a course of remedial action. Operations and other treatment are performed by the specialists of the Center in surrounding hospitals, if the patient so desires.

This pooling of knowledge and resources could not be accomplished if the doctors felt geared to a diagnostic supermachine designed to grind out routine information for private profit. It works because they live as a free association of colleagues, continuously learning from each other and expanding their individual competence by drawing on the tools and methods of the whole clinic and on its immense store of accumulated experience. It works because bureaucracy and lost motion have been cut to a minimum by effective organization and mechanization of tests, thus leaving time for mutual consultation, lectures, and thinking. It works because the doctors are "equal among equals," handle the affairs of the clinic themselves by a "committee of

THE PHOTOGRAPH on the preceding page (by Bob Lyon) shows a mobile by Al Duca hanging beneath the

dome at the Massachusetts Avenue entrance to M.I.T. during a recent exhibit entitled "The Age of Materials."

eleven" elected for one four-year term, and turn over the profit of their joint enterprise to a foundation dedicated to the further advancement of medicine.

Here, obviously, is a successful prototype organization for the effective collaboration of experts. It has averted the danger of internal strife by selecting its members according to competence and character. Objectivity and openness ban political plotting; respect for the opinion of others, tact, and helpfulness are expected; unbridled ambition, egotism, and arrogance disqualify. Substitute for the specialist doctor a professor with his students, creatively engaged in his special research program in the field of materials, and you have the spirit and first outlines of an organization for our Center.

Input, Output, and Converter

Let us switch standpoints to place the problem in a different perspective. An engineer, when inventing a device, strives to develop a converter that transforms a prescribed input into a desired output. Viewed in these terms, the situation at the Mayo Clinic seems straightforward: the input is patients with unknown ailments, entering the front door; the output is patients, analyzed and marked for treatment, leaving by the back door; the converter is an intricate kind of machinery measuring the patient's status quo and reactions, staffed by expert analysts who evaluate the evidence. There is, in addition, a hidden feed-back loop leading from patients during their later treatment back to the experts and into a case-memory unit. This stored experience is converted internally into additional information about the recognition of diseases, their trends and treatment.

The Center for Materials Science and Technology envisioned at M.I.T. is more complex to picture, since

its tasks are more involved. It is to be an institute for graduate and post-doctoral studies ranging in scope from abstract theory to fully engineered prototype devices. It will be concerned with materials: their structure, composition, properties, and applications from atoms and molecules to gases, liquids, solids and their interfaces, from insulators to electrolytes, semiconductors and metals. It should be a center for education and information, for pioneering and advice, for trouble shooting and long-range planning. The Mayo Clinic would correspond to an Institute for Materials Analysis only. Our center, in medical analogy, will have the much greater task of rebuilding man and making him fit to live in his surroundings; it anticipates—on the level of nonliving matter—the "medicine of the future."

How are we to embody this entity in a "Center for Materials Science and Technology," which seeks insight by "Molecular Science" and proficiency by "Molecular Engineering" for the construction of materials, properties, and devices from the atoms of the Periodic System? How can we strengthen the university concept of free scholars, while simultaneously drawing on the united strength of their knowledge for the common weal, since knowledge—like noblesse—obliges? To perceive the actual organization more clearly, let us turn once more to the analogue machine with its input, output, and converter.

The input is people, ranging all the way from students working on bachelor's, master's or doctor's theses to scientists and engineers accepted as post-doctoral fellows or returning from years of activity in laboratories of Government or Industry for a refresher period at the university. Materials and ideas are taken in as needed but, to a major extent, the Center should generate original materials and ideas. Requests will range the gamut from simple information on characteristics to reports on the status of knowledge in certain areas and, finally, to integrated research programs, e.g., on materials for space travel, or the proper allocation of a country's resources.

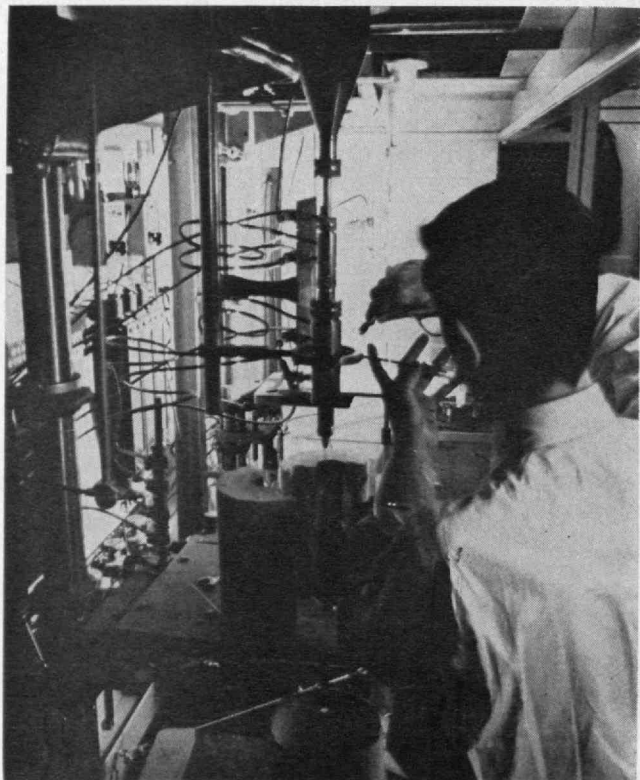
The output obviously is more highly educated people, better materials, new ideas and devices, deeper knowledge, and comprehensive information. But what is the miraculous converter that transforms input into such a varied output by voluntary action?

Center Organization

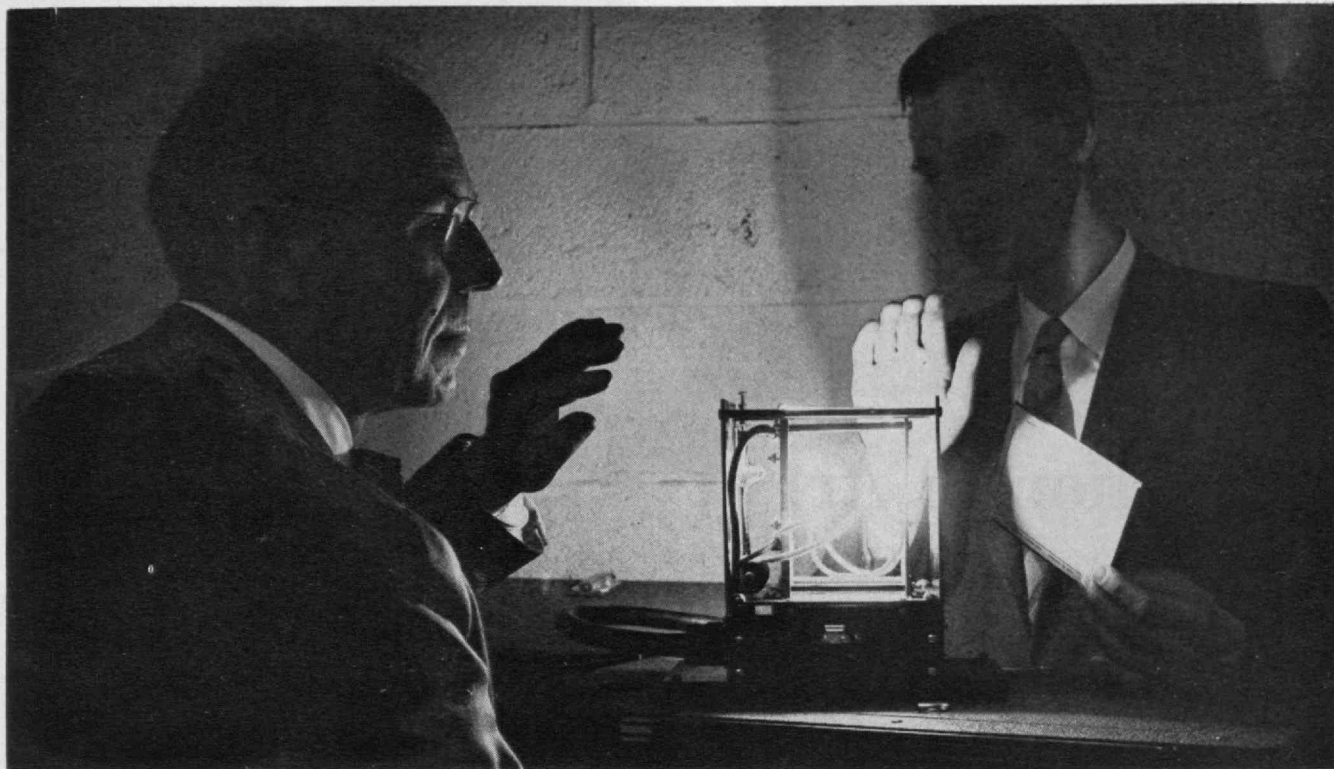
If the entity "professor(s) with students, supporting staff and instrumentation"—experts of a special field engaged in imaginative research—is named a "Laboratory," the Center represents a "federation of mutually supporting laboratories."

To assure a maximum amount of freedom, unnecessary centralization should be avoided; i.e., each laboratory should retain all of the functions it can discharge effectively. It can best handle its own requirements as to the hiring of man power, purchasing of equipment, and carrying on of research. Close personal contact between experimental projects and supporting machine shops has proven extremely valuable and could be maintained by letting laboratories or groups own and operate individual shops for their normal work.

The true driving force of the Center should be its interdepartmental faculty, selected for expert knowl-



Arthur Linz, '46, growing crystals by means of flame fusion.



Professors Harold E. Edgerton, '27, and Perry A. Miles, with a newly developed, efficient light source known as a laser.

edge and originality in decisive areas of materials and device research, and for compatibility. For teaching purposes, the professors would be members of various departments; in research activities, their loyalty should belong to the Center. The faculty meetings in various Centers, concerned with issues of vital importance to their members, would restore to the university the fire of spirited debate and common action that is now lost through the size of our institutions.

The executive branch of the Center could be a "Coordinating Division," headed by a "Committee of Three," elected for a four-year term. These three "directors" should be experts from various fields (e.g., a theoretical scientist, an experimental scientist, and an engineer) still actively engaged in research. Their combined knowledge would make them respected and helpful discussion partners for their colleagues. Pioneering research is a lonely task, and advice and encouragement at the right time can move mountains.

The Center should receive one or several large Government contracts to assure its main support on a long-range basis for effective planning. Smaller contracts for special needs of individual laboratories might be procured when indicated. The individual laboratories would draw annual budgets from the Center, fixed on an equitable basis according to needs and resources. The figures established in discussions between the director of each laboratory and the directors of the Center might be presented later in a faculty meeting of the Center, and there appealed and defended.

The "Coordinating Division" under its directors would have some obvious tasks: to create and maintain facilities and services required by the Center; to formulate and implement Center policies, subject to approval by the faculty; and to represent the Center to the M.I.T. administration at large and to outside agencies.

There are also some obvious facilities the Center must have: shops with special machinery and skills complementing those of the individual laboratories; a Library, Information, and Publication Center concerned with the whole field of materials and their applications (to place the literature of the whole world at our fingertips, publish the quantitative information accumulating by Center research as "M.I.T. Tables on Materials," give rapid information to any justified request, and edit Center reports and publications); a Budget and Purchasing Office controlling expenses, and disbursing the funds of the Coordinating Division.

Policies and Procedures

In contrast to the Mayo Clinic, input and output cannot be traced at this kind of Center to one front door and one back door. Here we have a living organism of cells, the laboratories—maybe 25 to 50 in number—all with entrances and exits in addition to the main ones of the Coordinating Division. Thus much of the Center's strength cannot be organized from the outside but will have to grow by spontaneous co-operation in a favorable climate. Certain needs, on the other hand, must be met by inventive organization.

Materials are required by all experimental laboratories, grown as single crystals or prepared as polycrystalline specimens, produced as gases, liquids, polymers, or glasses, shaped into prescribed samples and properly synthesized and analyzed. For a real understanding, many of these samples must be measured exhaustively. Data will be required on structure and microcomposition, on imperfections and phase transitions, electric and magnetic response throughout the electric and optical range as functions of temperature and pressure; on mechanical response, transducer and

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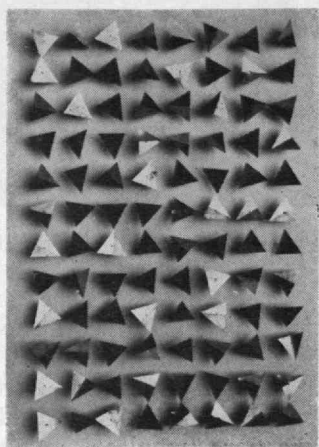
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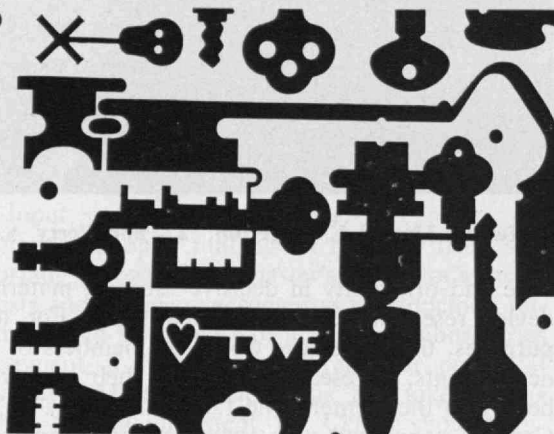
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Education in Art at M.I.T.

C



D



BY
ROBERT O.
PREUSSER

*Assistant Professor
of Visual Design*

PARTICIPATION in the visual arts is giving a new dimension to education at M.I.T. Contrary to the myth that Art and Science do not mix, students are freely electing studio courses and performing creatively. This recent development is the Institute's response to the urgent need of overcoming visual "illiteracy" in an age increasingly dependent upon perceptual awareness.

The visual arts program, a tenth field in the humanities and social studies electives from which each student selects an area of concentration in his junior and senior years, is attracting students from more than half the departments in the Institute. By combining history and criticism with drawing and painting, the program affords an opportunity for students to gain an understanding of art and develop confidence in visual expression.

As an innovation in general education for scientists and engineers, the study of art with its capacity to transform concept into immediate

experience, and make possible instantaneous total projection of thought and feeling, transcends education in the conventional sense. The artist's method of working intuitively and empirically to achieve qualitative values is a unique experience for students oriented toward quantitative concepts arrived at by formula. M.I.T. students' successful studio performance evokes no less surprise than that such an opportunity exists in a scientific and technological school. There is impressive evidence that visual sensitivity and ability to create visual form can no longer be considered the exclusive domain of the liberal arts colleges.

The role of the visual arts in modern education has been of increasing concern to colleges and universities

in recent years. No exception to this trend, M.I.T. was among the first to give it serious consideration. An investigation, resulting in recommendations for the existing program, began in 1952 when the School of Humanities (supported by the Carnegie Corporation) appointed a committee for the study of the Visual Arts at M.I.T. Initiated by John E. Burchard, '23, Dean of the School of Humanities and Social Science, this committee consisted of John Coolidge, Director of the Fogg Museum at Harvard University; Robert Iglehart, Chairman of the Department of Art at the University of Michigan; Bartlett H. Hayes, Jr., Director of the Addison Gallery of American Art at the Phillips Academy, Andover; Charles H. Sawyer, Professor of Art

The photos above are of (A) surface variation with lines, by Edward Agro, Course VIII; (B) paper relief sculpture, by Robert Fisher, XXI-A; (C) mobile relief with magnetized triangles, by John Karl, VIII; and (D) figure ground reversal with positive or negative imagery, by Richard Lyons, II; and the one on the next page is an experimental drawing made with a comb and ink by William Black, VI-B.



BIA

at the University of Michigan; and James J. Sweeney, then Director of the Solomon R. Guggenheim Museum in New York.

In the committee's own words, its task was "to determine the nature of a Visual Arts program which might contribute not only to the efficiency of the technical mind but also to its scope by providing the student with an insight into nontechnical values which he might not otherwise attain." The findings emphasized that neglect of visual education had resulted in a discrepancy between the average freshman's ability to think and to see. "The goal of the ideal program is to develop the capacity of the technician to undertake responsibility for the forms that his technical training creates," the committee reported. "The quality of these forms, as of his own spiritual insight, ultimately affects the social atmosphere and climate of thought of his entire world."

Within the framework of this report, the Department of Architec-

ture organized the Visual Arts program in 1957. By providing courses in the visual arts for the Humanities Department, the Architecture Department has extended its teaching to include the general education of students at large in addition to its professional courses. Consistent with the undergraduate program in humanities and social studies, Field Ten-Visual Arts requires three semesters for credit as a concentration. Verbal courses include *Introduction to Art and Architecture*, *Modern Art and Architecture*, and *Architecture of Cities*. Studio courses deal with *Visual Design Problems* and *Visual Design Projects*. Any combination of these is permissible provided one studio course is taken.

In organizing the program the studio was considered as essential to the study of art as the laboratory is to the study of science. Just as participation without history and criticism fails to reveal the intellectual and historical significance of art, the verbal approach without studio experi-

ence neglects the potentiality of human creativeness and often fails to develop adequately the visual sensitivity necessary for response to visual problems of our day. It was felt that this point of view was particularly relevant for M.I.T. students, and that theory without practice would limit art's unique contribution to liberal education of the specialist.

Traditionally associated with the training of professional artists, the studio as a tool in general education is an experiment which requires that a distinction be made between the vocational approach to Art and one concerned with liberal learning. In making this distinction it became necessary not only to direct studio activities in such a way as to make them meaningful to students with no previous experience (and no intention of becoming artists) but also to design a course that would challenge students pursuing a wide range of professions. The creative process as
(Concluded on page 39)

Books

SCIENCE AND GOVERNMENT, by C. P. Snow; Harvard University Press (\$2.50). Reviewed by V. A. Fulmer, '53, Executive Assistant to the Chairman of the M.I.T. Corporation.

THIS provocative essay is a case study of the role of scientists in the governmental decision-making process. It points up a number of challenges certain to become increasingly important in our national life.

"One of the most bizarre features of any advanced industrial society in our time," Sir Charles writes, "is that the cardinal choices have to be made by a handful of men: in secret; and, at least in legal form, by men who cannot have a firsthand knowledge of what those choices depend on or what their results may be." In the lexicon of political science, this book is an analysis of "closed" political systems . . . the machinery by which scientists are asked to give secret advice on the crucial questions of our times.

The plot concerns two men and two cloak-and-dagger choices: Sir Henry Tizard and F. A. Lindemann, who engaged in a now famous controversy over the development of radar as Britain's principal air-defense system and, later, over strategic bombing against Germany in World War II.

M.I.T. Alumni will have a special reason for reading this lucid little book, quite apart from its timely subject matter. C. P. Snow's chronology of events leading up to the British decision to send Sir Henry Tizard to the United States with British radar secrets in September of 1940 is an important, heretofore unpublished chapter in the history of the wartime Radiation Laboratory at M.I.T. Roughly half of this book is given over to the pulling and hauling which preceded Tizard's arrival in this country.

C. P. Snow's conclusion is that advanced societies desperately need more scientists in government, although the reader will probably be surprised at the reason *why*. He points with deep concern to the risks that advanced societies run in their ultimate dependence upon the fallible judgments of a few knowledgeable in-

dividuals. He shudders, for example, at the thought of what might have happened to England if Sir Henry Tizard had allowed radar development to become sidetracked in favor of other schemes for air defense. He is even more apprehensive about the buffeting of great national decisions by the hot winds of personal relations between scientists. If personalities carry a heavy weight in "open" political systems, then they are at a classical extreme in the dynamics of "closed" politics. Decisions based upon scientific choices almost always involve this larger risk, Sir Charles maintains. The "euphoria of secrecy," imposed either because of military requirements or because of the natural difficulty of communication between the scientist and nonscientist, leaves most scientific decisions in the hands of dangerously few men.

The author's prescription for this poor state of scientific health in national governments is simple. It would be ideal, he observes, if we could insist upon wide scientific literacy among government administrators. But this is not really a practical solution in the foreseeable future. Failing this, advanced societies should:

- 1) Avoid at all cost a single scientific overlord.
- 2) Avoid "gadgets" scientists in government. The closer a scientist is to some hardware development, the less likely he is to be objective about scientific choices which might involve his or someone else's gadgets . . . atomic bombs, antibiotics, and television sets included.
- 3) Enlarge the number of scientists involved in advising government.

But the crux of the matter, according to Sir Charles, is not how to protect society from science but how to use science to restore initiative in societies grown flabby with their own success, societies which have lost their sense of purpose. At one end of the spectrum of uses to which governments can apply science is the destruction of human life . . . at the other end stands the preservation of life. In both regions, C. P. Snow feels, there is no shortage of initiative. Men have always been able to think ingeniously about life-and-death matters affecting society.

It is in the great range of opportunities that lies between the two extremes of destruction and preservation of life that scientists should be employed in greater numbers. By temperament and tradition, scientists can bring speculative and imaginative influences, and above all, a sense of the future, into our political processes. Though he claims no special foresight for scientists as a group, Sir Charles argues that their disciplined sense of time (of science as an endless frontier, to use Dr. Bush's words) can revitalize our society in this great political middle ground. Scientists, more than any other single group, can help us to replace our existential order with one that is future-directed.

Sir Charles's book adds significantly to the scant literature available to the student of science and government. There can be no doubt that he has performed a service in putting so concisely what others have only hinted at with much less economy of words.

Engineers in this country, and perhaps in England, will regret the unfortunate blurring of the role of the engineer in the great wartime developments reported in this book. In the hands of a literary giant like Sir Charles, this fuzziness is a real hazard to improved pub-

(Continued on page 52)

Books the President Has Read

THREE of seven books which have influenced John F. Kennedy's approach to the presidency, according to The New York Times Sunday Magazine (March 12), were written by members of M.I.T.'s Faculty. These books are: *Turmoil and Tradition*, a study of the life and times of Henry L. Stimson, by Elting E. Morison; *The United States in the World Arena*, by W. W. Rostow; and *The Question of Government Spending*, by Francis M. Bator, '49. All three were published within the last year and widely reviewed.

Weather Satellites and Forecasts

The quality, scope, and imaginativeness of predictions will be improved as the wealth of data becoming available is analyzed

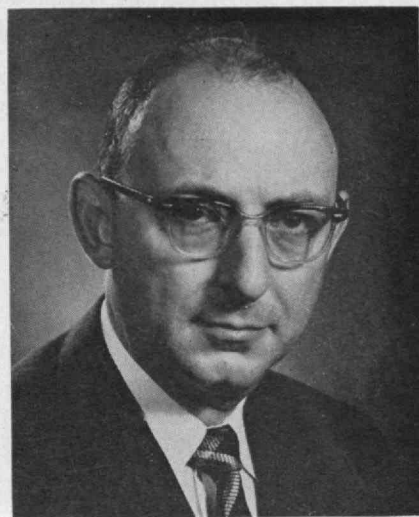
BY ARNOLD H. GLASER

WHEN the first meteorological satellite, Vanguard II, was launched into orbit to scan the clouds below it and telemeter the results back to ground stations, scientific pundits promptly took to the airwaves to proclaim the arrival of the meteorological millennium: henceforth accurate forecasts would be available many days and weeks in advance. Its orbital inclination of 33 degrees barely permitted the satellite to peek into the temperate zones, but this was overlooked. Also ignored was the experimental nature of the satellite; before it was launched (February 17, 1959), no one had a clear idea of what to expect, so no provision was made for rapid data processing or for worldwide dissemination of the results. Data processing is just now nearing completion. Understandably, there was no noticeable immediate effect on meteorological forecasting.

On April 1, 1960, TIROS I, a more sophisticated television satellite, was injected into an almost perfect circular orbit 450 miles high. Its 48-degree orbital inclination permitted its television cameras to scan the atmosphere nearly to the Arctic. Teams of trained satellite meteorologists were waiting at the ground stations, armed with rapid, flexible techniques for data processing. Pictures came flooding down from the satellite—marvelous pictures, far exceeding in information content the hopes of the most optimistic. Hastily organized communications networks carried the fresh meteorological data around the world. Once again the meteorological millennium was proclaimed.

The man in the street, however, saw no improvement in the accuracy or adventurousness of his daily forecasts. The reason, of course, was that TIROS I was also an experimental satellite, not intended for serious operational work. It was spin-stabi-

ARNOLD H. GLASER, '52 (at right) began his meteorological career with a revolution-punctuated tour of duty as an airline forecaster in Peru and Bolivia. He has since taught meteorology for the U.S. and Brazilian Air Forces and at Texas A. & M. College. He is now manager of the Geophysics Department of Allied Research Associates, Inc., of Boston. His group there has developed techniques of processing and utilizing data obtained from the TIROS meteorological satellites. Dr. Glaser deplores Boston's recent weather but has no practical solutions to offer for its amelioration.



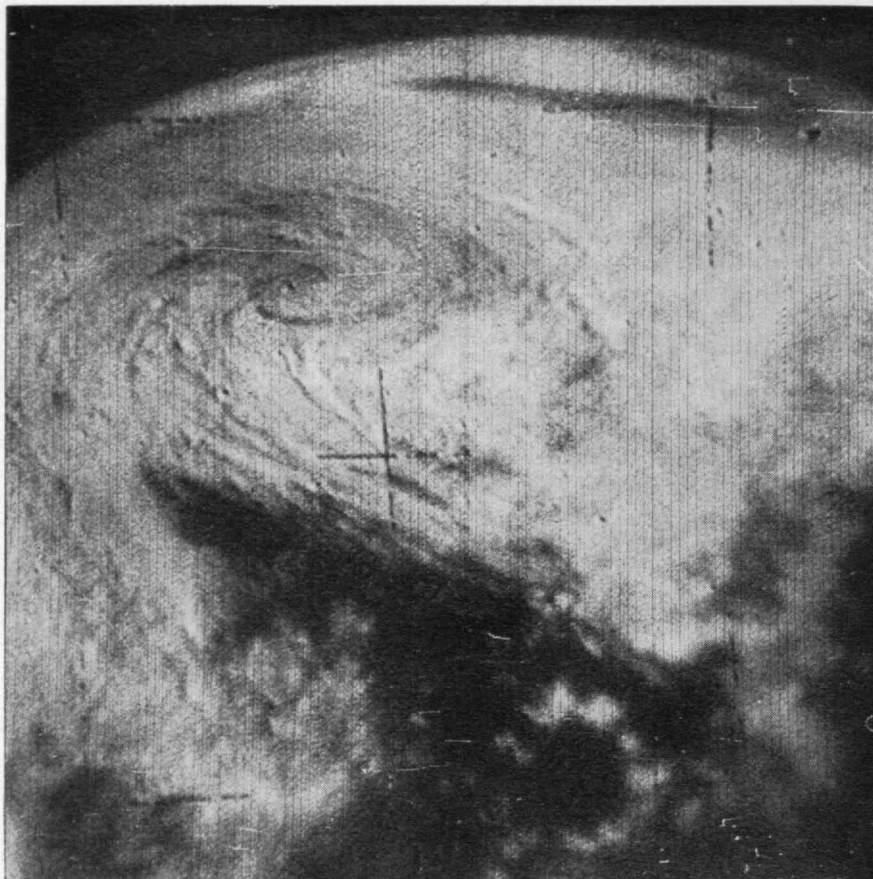
lized to act like a gyroscope in space. Its camera, pointing downward only when one extension of the spin axis intersected the earth, took pictures when that part of the earth was sunlit. The earth's magnetic field, interacting with the fields produced by the satellite's electronic circuits, caused the spin axis to drift about in space, perversely causing TIROS I to spend much of its time looking downward in the Southern Hemisphere. Accordingly, when a forecast was to be made for New York, the probability was small that a recent picture had been taken in the area of interest, and even smaller that a sequence of picture coverages at 24-hour intervals was available to permit tracing the progress and development of storms and fronts.

But on the various parts of the earth to which TIROS pointed, new meteorological marvels were constantly found. Cyclones, anticyclones, fronts, hurricanes, and even occasional jet streams stood out in clear relief, and unexpected structural details were revealed for the first time. Entirely new meteorological phenomena appeared, then obligingly reappeared to confirm their reality and frequency.

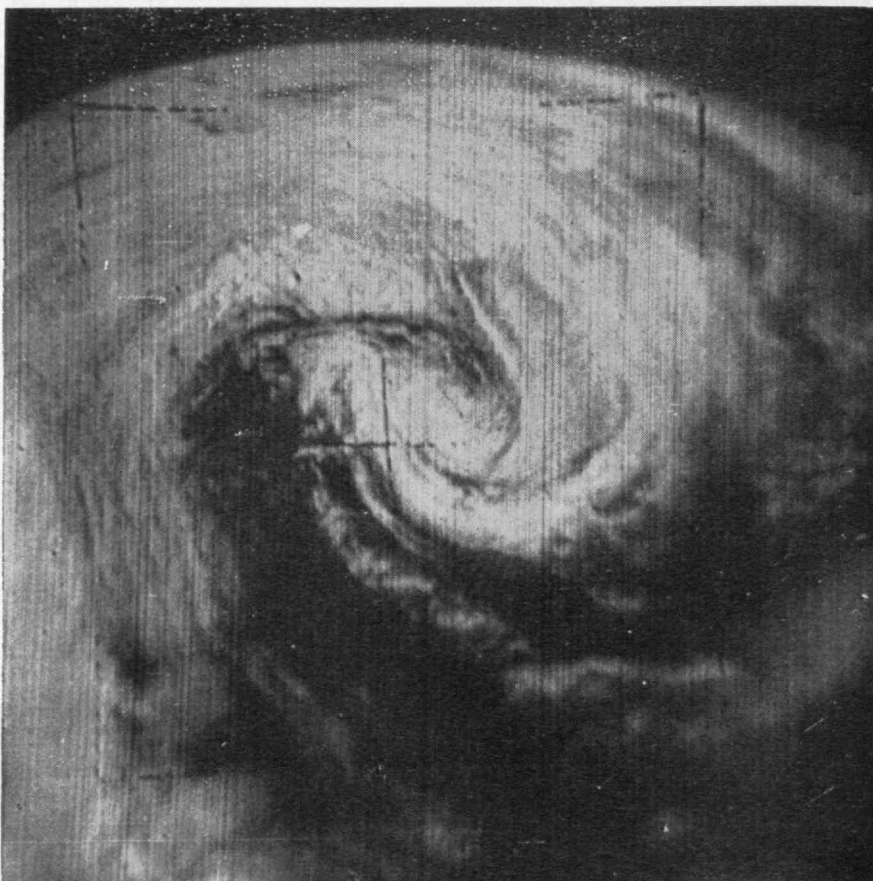
TIROS I expired at the ripe age of 78 days after collecting 22,952 pictures. Research meteorologists, appalled by the sheer bulk of data represented, have now made a small beginning on the task of combing through these pictures to correlate the cloud patterns with the features of conventional pressure-and-temperature weather maps. The material for many a master's thesis is contained on the TIROS I films.

TIROS II, fired on November 23, 1960, suffered an accident of unknown nature during launch that spoiled the resolution of its wide-angle camera. While its pictures will be of less utility for research purposes than those of TIROS I, it is being found that even pictures of reduced resolution are of considerable value for operational forecasting purposes.

In addition to its cameras, TIROS II carries a battery of radiation sensors, designed to scan the atmosphere in various wave-length bands from the visible through the far infrared. The output from these sensors will be of value in determining the heat budget of the earth and its atmosphere, and in isolating the factors that control it. Since the weather represents the action of a heat en-



Signature clouds of a vigorous young cyclonic storm. The clockwise flow lines show it is from the Southern Hemisphere.



A mature cyclonic storm in the southern Indian Ocean. Clear (dark) wedge in foreground is characteristic at this stage.

gine running between the solar heating of the earth as boiler and the thermal (infrared) emission of the atmosphere as condenser, understanding of the heat budget is basic to understanding (and perhaps controlling) the weather. Each of the five scanning optical sensors makes about one million observations per day. Understandably, some time will pass before the data will have been even partially digested.

TIROS II is still operating at this writing. It is to be followed by TIROS III, and later by TIROS IV. These will be minor modifications of the same basic experimental satellite.

Next Year: NIMBUS

Scheduled for launch in 1962 is NIMBUS, an advanced experimental system featuring earth stabilization and a near-polar orbit.

This stabilization will permit its cameras always to point downwards, so that essentially complete coverage of the earth can be obtained once each 12 hours. Television coverage will be provided on the daylight sides of the orbits, while infrared scanning will permit cloud identification on the nighttime sides.

A special data-acquisition station is being established north of Fairbanks, Alaska, where it will be in a position to receive satellite-stored television and infrared information from nearly all orbits. A special high-capacity communications link will speed the pictures and other atmospheric data to weather centers in the continental United States. Future models of NIMBUS may include weather radars and detectors of "sferics," radio frequency emanations from thunderstorms and other disturbances.

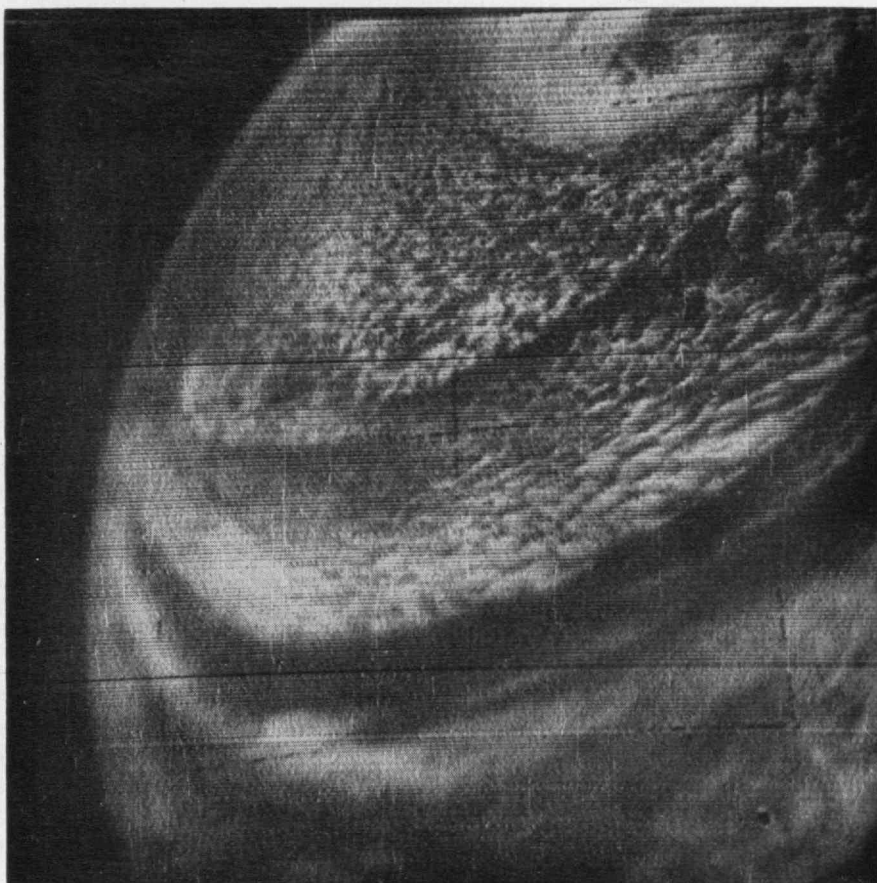
Even the advanced features of NIMBUS will not meet all the requirements of a satellite suitable for taking observations for operational forecasting purposes. One difficulty will be the 24-hour interval between similar pictures of the same area. While such an interval is suitable for general forecasts, particularly in "under-observed" areas, it provides too coarse a time resolution for the detailed weather forecasting we have learned to expect.

An obvious solution to this problem is to increase the number of satellites functional at any time. But the cost of launching a 650-pound satel-

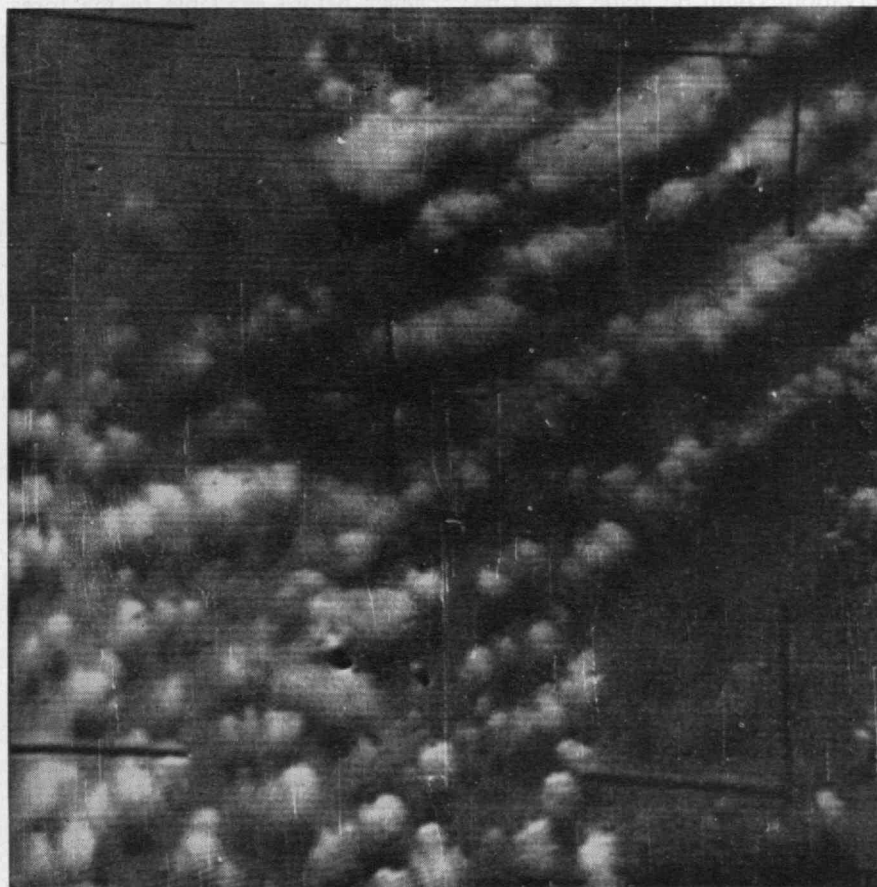
lite such as NIMBUS and the attendant problems of reliability, associated with both the electronics and the stabilization mechanisms, tend to discourage the operational use of a number of these satellites. If it were possible to assure evenly spaced orbits, six satellites might give excellent time and space coverage. Because of the random spacing that the satellites are likely to achieve after some time in orbit, however, a more realistic estimate of the number of satellites required would be nine or ten.

The AEROS satellite project represents an attempt by NASA to remedy this situation. AEROS would be a stabilized satellite moving in a 22,000-mile equatorial orbit in the same direction that the earth turns. At that distance, the orbital period would be 24 hours, so the satellite would appear to hover motionless over a point on the equator. From its great height, the satellite could constantly observe about one-third of the earth. Three such satellites could maintain surveillance over the entire earth with the exception of the polar caps. If some orbital inclination were present, the satellite would describe an apparent figure 8 with respect to some point on the equator, thus permitting surveillance of the polar caps. It can well be appreciated that AEROS represents a degree of sophistication that has not yet been achieved in our satellite construction. In order to be economically feasible, the AEROS satellite must have a long life, probably measured in years. With the necessary complication represented by the stabilization, the extremely high quality optics, and the long distance telemetry, such reliability could be achieved at the present state of the art only by the use of heavy and redundant components. If the same satellites were to be used as communications relay stations, however, the AEROS satellites might soon become economically feasible.

An alternate approach to the problem of achieving general coverage would be to use large numbers of low-flying satellites of as simple design as possible. It would appear feasible to make satellites which would require no stabilization at all beyond that provided by the slight torque exerted by the gravitational gradient on an unsymmetrical body. Picture taking would be performed



Broad bands of clouds, mainly cumulus and stratocumulus, on a weakening cyclone's outer fringe in the eastern Pacific.



A narrow angle camera shot over Saudi Arabia of rows of cumulus clouds. Individual clouds are about five miles in diameter.

over a field of view somewhat greater than 180 degrees, so the full horizon would be available for ascertaining the orientation of the satellite even when it was librating (rocking) because of gravitational perturbations. These satellites could be solar powered in the manner of TIROS; hopefully, reduced power consumption would permit reduction in the weight of the power supply components.

No provision would be made in this system for the storage of data on board the satellite. The simplest mode of transmission of pictures to the ground involves interrogation of the satellite by a ground station beneath it. This could cause it to take a single picture, or possibly a sequence of pictures, to be directly televised to the same ground station. In this fashion, a ground station could obtain a detailed view of the clouds in the atmosphere for a distance of 1,000 or more miles around it, which is ample coverage for short-range forecasting. Assembly of reports from a number of such ground stations could give very nearly complete coverage of the globe.

The frequency at which such observations could be made would be determined by the number of satellites in orbit. Because of the low orbit and cheap construction, 30 or so satellites could be in orbit simultaneously; failure of one or a few would not be catastrophic. A central data processor would have to keep track of the individual satellites, however, so that each ground station would know when to expect a satellite in its area for interrogation.

A more complex system of weather satellite communications would be possible with the network of low-flying active communications relay satellites that has been projected. In this case satellite interrogation could occur from a central station, the interrogation signal being relayed through the satellite communication network to the vicinity of the meteorological satellite assigned to take an observation. The transmission of its televised observation, slowed down to fit the capacity of the available communication channel, would return over the same route as the interrogation signal. Such a system would permit complete flexibility of operation, since irregular but frequent reports could be obtained from the entire earth and be avail-

able at one or a number of central stations.

Let us assume now that the mechanical and electronic problems of establishing full and frequent meteorological satellite coverage of the earth have been solved. What, then, may we expect from the forecasters? It may readily be predicted that, in general, forecasts will be improved. The degree of improvement to be expected, however, is still open to question.

Since the TIROS satellites survey the same region at best once each 24 hours, attention has been focused largely on forecasts of that period. For these short-range forecasts, the value of the satellite meteorological observer is almost self-obvious. The pictures show graphically the cyclones, fronts, and other major meteorological features of consequence in forecasting. They are shown so clearly that a mosaic of TIROS pictures has been called a "self-analyzed weather map."

For forecasts for periods shorter than 24 hours, the outlook is even more encouraging. The TIROS pictures present structural details of meteorological features that were never before available to the forecaster. In general, the lifetime of a structural element of the atmospheric circulation (a "system") is proportional to its size. The conventional meteorological network has been far too coarse to define details of size much smaller than major cyclonic elements or entire frontal systems. The weather radar, on the other hand, has proven itself of value only in precipitation forecasts of an hour or two at best. The meteorological satellite, then, appears to provide the density of data coverage needed to supply detailed forecasts for periods of interest to most of us—one day down to a few hours.

The utility of the meteorological satellite in longer range forecasting is by no means as clear. The restricted coverage of the TIROS satellites has made it difficult to assess the feasibility of the interpretation of giant-scale cloud systems (cyclone "families") in terms of the long-range forecast.

Once we consider the problems of forecasting for periods greater than five days or so, we must abandon simple extrapolation of existing systems or groups of systems and consider the basic energetics of the

atmosphere. Here the infrared observations of the meteorological satellite may prove of value. Techniques for using these observations for such purposes are being explored, but it is far too early to judge whether our grasp of the workings of the atmospheric heat engine is sufficient for such long-range forecasts.

As for forecasts in excess of a month or so, it would appear that we must depend upon the fascinating discoveries being made by those who are studying the relation between manifestations on the sun and the weather on earth. It may well be that special sensors on board the meteorological satellites to measure the behavior of the far ultraviolet and x-ray emission of the sun may make such far-extended forecasts possible.

After such a cautiously optimistic evaluation of the potential of the meteorological satellite the question may well arise, "Is it worth it?" But how does one evaluate man's increasing knowledge of, and control of, his environment? The economic value of accurate forecasting has been so well established that no one questions the continuous expenditure for our excellent network of conventional observations, both on the surface and in the upper atmosphere. By the use of this network, the U.S. Weather Bureau has achieved a level of proficiency of forecasting usually described pessimistically as "85 per cent accurate." It is quite impossible to estimate the value of even a small increase in that accuracy. Any substantial increase could bring enormous economic benefits.

Even if it should be found that the complex network of satellites and communications required for a full operational meteorological satellite system is not economically feasible for some time to come, we have collected a tremendous amount of new information already about the nature of the atmosphere, its storms and its clouds—and this flow of information is continuing. The new knowledge gained has already started to make itself felt in forecasting. Soon we may expect to see the quality, the scope, and the imaginativeness of weather forecasting improved to the point where the investment we have made will seem amply repaid.

Institute Yesteryears

25 Years Ago . . .

It was publicized in *The Review* for May, 1936, that "the entrance requirements of the Institute have been revised and the new regulations, which permit greater flexibility in the choice of subjects and require fewer examinations, will become effective next autumn. The changes affect particularly those students who cannot qualify under the plan which permits students in the highest fifth of their class to enter Technology without examination. . . .

"Under the new entrance regulations, high- and preparatory-school students will be able to follow a more general program of preparation for their later work in science or engineering. In addition to a thorough preparation in English, which is considered a subject of fundamental importance, it is also necessary to be prepared soundly in physics and mathematics, on which much of the first year's work at Technology is based. The electives which may be offered include languages; social, biological, or physical sciences; mathematics, mechanic arts, mechanical drawing, commercial studies, fine arts, drama, or music."

¶ Kudos evidenced by medals came to five Alumni, namely: to *Frank B. Jewett*, '03, the Franklin Gold of

the Franklin Institute . . . to *Arthur C. Willard*, '04, the F. Paul Anderson of the American Society of Heating and Ventilating Engineers . . . to *Charles A. Kraus*, '08, the Theodore William Richards of the Northeastern Section, American Chemical Society . . . to *Alfred V. de Forest*, '11, the Edward Longstreth of the Franklin Institute . . . and to *Vannevar Bush*, '16, the Lamme of the American Institute of Electrical Engineers.

50 Years Ago . . .

THE REVIEW proclaimed: "The wonderful unfolding of the Institute of Technology which has been going on for the past two or three years reached a climax [during May, 1911] when within a period of a week, announcement of new sources of income were made which roughly aggregate \$2,500,000.

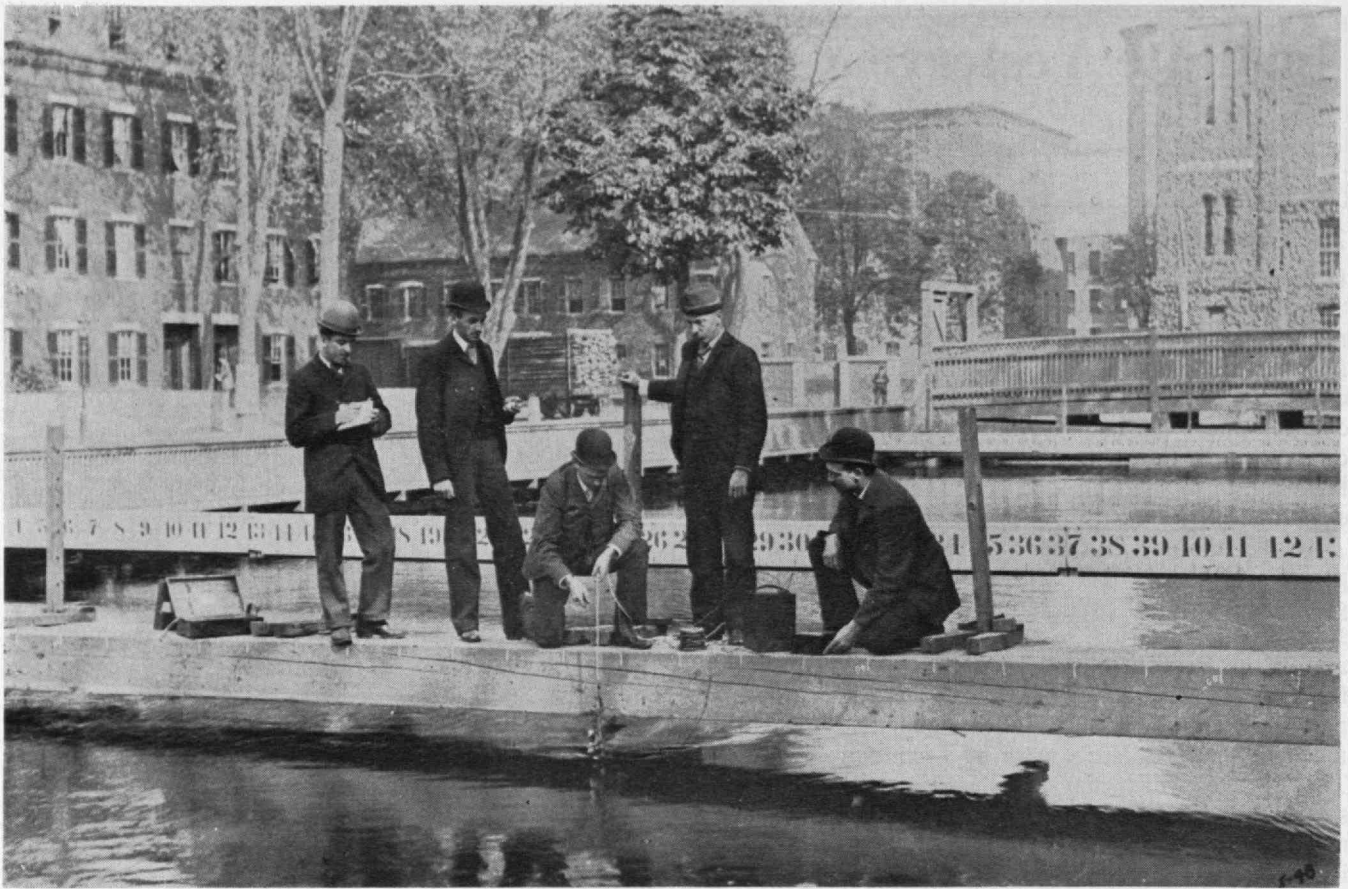
"The signing of the bill by Governor Foss, granting the Institute \$100,000 a year for 10 years is the most important of these developments because this money will provide for the running expenses of the Institute and will allow the gifts of alumni to be devoted to buildings and other specific purposes . . . *

"The next important announcement was a gift of \$500,000 from Coleman du Pont, '84, a Life Member of the Corporation. This money is to be used in buying land for a new site . . . One of the stipulations is that

* Altogether, up to 1921, the Institute received from the Commonwealth about \$1,600,000, in addition to the original grant of land; but, in that year, a change in the Constitution made all further gifts to privately endowed institutions impossible.



Professor William T. Sedgwick lecturing in a 19th Century predecessor of the Institute's modern biology laboratories.



Photos from a Centennial Exhibit at the M.I.T. Faculty Club

Institute students in the 1800's made Ellis meter measurements at Lowell. The instrument measured the flow of water.

a certain amount of land is to be secured for a site in a locality approved by him, which must be as convenient as possible to Copley Square . . .

"The will of Mrs. William Barton Rogers provides that the residue of her estate after paying certain legacies to relatives, shall revert to the Institute. The newspapers state that this amount will approximate \$500,000.

"The Institute will also receive from the estate of the late Francis B. Greene the sum of about \$600,000, from a trust fund created five years ago and which was only recently made known to Institute officials. The income from this fund is to be used entirely for scholarships . . ."

75 Years Ago . . .

"THE ALL-ABSORBING topic at present in the local affairs of the city is the horse-railway problem," commented the editor of *The Tech*. "The daily papers contain many accounts of the wrongs and nuisances committed by these corporations.

"Our own little grievance, at the Institute, is the failure to always induce a car to stop when signalled. The drivers, acting, we suppose, upon the supposition that everybody here is a young athlete, and perfectly able to jump on the car in motion, drive by our building at full speed.

"The trouble comes when, on a rainy night, with a drawing board under one arm and a bag and umbrella under the other, a man is expected to catch a car on the fly.

"We happened to notice, one evening some months ago, a couple of fellows descend the steps of Rogers and invite, in a perfectly distinct manner, a passing car to stop. The conductor declined the invitation, and stood in the doorway of the car with a very expressive grin on his face, evidently enjoying the race, for the two gave chase. The latter won, but not until the car had reached Arlington Street. This conductor was probably a trusted and honored servant of the road by which he was employed, for he was seen on the street, a few weeks after, promoted to the dignity of a car-starter."

¶ In an adjoining column appeared the following: "Now doth the weary and over-worked senior nose around in search of a subject for a thesis that will insure him a degree with the minimum amount of work."

¶ The annual battalion prize-drill was held in the large hall of the Charitable Mechanics Building on the afternoon of May 15, 1886. According to *The Tech*, "an enormous crowd of spectators, including officers of other school battalions, and many ladies, was present.

"The line was formed promptly at 2 o'clock for a half-hour's battalion drill; and this was followed by the company drill for the prize flags, in which each company was allowed 15 minutes. The sabre squad under Major Fiske next had the floor, and gave a good exhibition. Then came guard mounting, with Captain French as the officer of the day. . . .

"After the dress parade, in which the drum corps were quite noticeable, President Walker awarded the prizes. . . ."

BUSINESS IN MOTION

To our Colleagues in American Business ...

The rapid development of the modern submersible water pump has resulted in the development of new applications for old metals.

Recently one of Revere's Technical Advisors was called in by a prominent manufacturer of this type pump for consultation regarding the diffuser casing which is a working part located in the interior of their pump used in deep and shallow wells. It was made of a ferrous metal and, while it functioned satisfactorily as a part, it proved difficult to fabricate. In addition, tool life was alarmingly short. After studying the problem in cooperation with the manufacturer's engineers, and consulting with the Revere Mills, Revere cartridge brass strip of a certain temper was recommended.

Samples were submitted, and after extensive tests approved for the part. The customer has found that not only does the diffuser casing, made of Revere Brass, perform well in the pump, but it also has

superior drawing properties, is more easily worked, and tool life has been substantially increased.

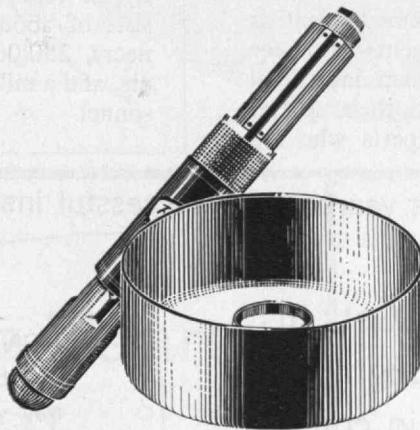
This meticulous attention to "fitting the metal to the job" also resulted in this manufacturer's specifying Revere seamless leaded brass tubing for the upper body shell of its submersible pumps. Here the application called for extremely close straightness

and roundness control which meant special attention to detail on the part of the Revere Mills.

You have just read of two more examples of the vital importance of selecting the metal that is not only satisfactory from a functional standpoint but one that is equally satisfactory from

a production standpoint. For, what may be saved on one hand can very well be lost on the other, if the metal is not properly balanced to fit the conditions met, both in use and in fabrication.

It is only by taking your supplier into your confidence that you can ultimately produce the best possible product at the least possible cost.



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, New York 17, N. Y.

A University's Proper Heritage

(Concluded from page 25)

converter effects, etc. Any one of the needed techniques will be an essential research tool in one or the other of the laboratories and there practiced by expert hands. An individual laboratory can only be equipped for a few types of tests; hence, much research refers to ill-described samples and its value remains in doubt. Nowadays, nearly all special materials—developed after years of struggle—are prematurely discarded before yielding the final information that would obviate reinvestigation.

The Coordinating Division, therefore, will have to organize a co-operative effort for making and measuring materials to perfection. It must be possible to grow crystals, cast metals, prepare ceramics, glasses, and polymers in Center facilities attached to and supervised by the individual laboratories. It must be possible to send standardized samples from the laboratory of origin through a succession of test stations for a thorough check-up. This chain of production and test facilities, maintained by the Center but developed by and entrusted to individual laboratories, would simultaneously serve for the education of students in skills and methods required for their thesis research.

The Coordinating Division also will have to create and maintain a small staff of broadly trained scientists and engineers who—as crosslinking agents—transfer knowledge and give temporary help when individual laboratories encounter problems beyond their special experience. This staff would attract experts who are

artists in making materials and devising new techniques; it would be a training station for mature scientists and engineers, seeking a more comprehensive view of large areas of materials and device research; and it would contain people concerned with new, imaginative methods of classifying, storing, and retrieving knowledge, thus making the Information Center a true source of advice and an indispensable guide of policy.

Co-operation must not become exploitation. Fifty per cent of a faculty member's time should be his own for research with his students. Shielded by these and other safeguards, a Center can rekindle and transfer the spirit of adventure, comradeship, and mutual enjoyment of discovery now nearly killed by competitive pressure. It can shelter laboratories yet unlabeled, where people dream about things to come. This is a university's proper heritage.

The Scientific Community's Size

AMERICAN scientists constitute "a very large, highly interactive and growing community with a self-conscious identity," Vernon L. Fladager, '60, found in a study cited in recent discussions at M.I.T. of science and public policy. This community, he reported, totals 2,284,000 now, and consists of about 260,000 scientists, 634,000 engineers, 250,000 medical doctors, 140,000 teachers, and a million others classified as technical personnel.

From New York Life's yearbook of successful insurance career men!

RONALD SCHECHTER—Gets his degree in "Success" through insurance career begun in college!

Ronald Schechter became a part-time New York Life Agent while still a sophomore in college. Two years later, after graduation, he joined the Company on a full-time basis. Ron has never had any regrets about his decision. At the close of his first full year, his efforts earned him a place in Nylic's "Star Club" of leading agents. He has qualified for the 1961 Million Dollar Round Table of the National Association of Life Underwriters.

Each succeeding year, Ron has earned even greater success. His past accomplishments are the result of his abilities. His promising future is limited only by his own talents and ambitions. If you, or someone you know, is interested in following a career like this, write for information.

RONALD M. SCHECHTER
New York Life
Representative
in the Northland—
Detroit, Mich.,
General Office

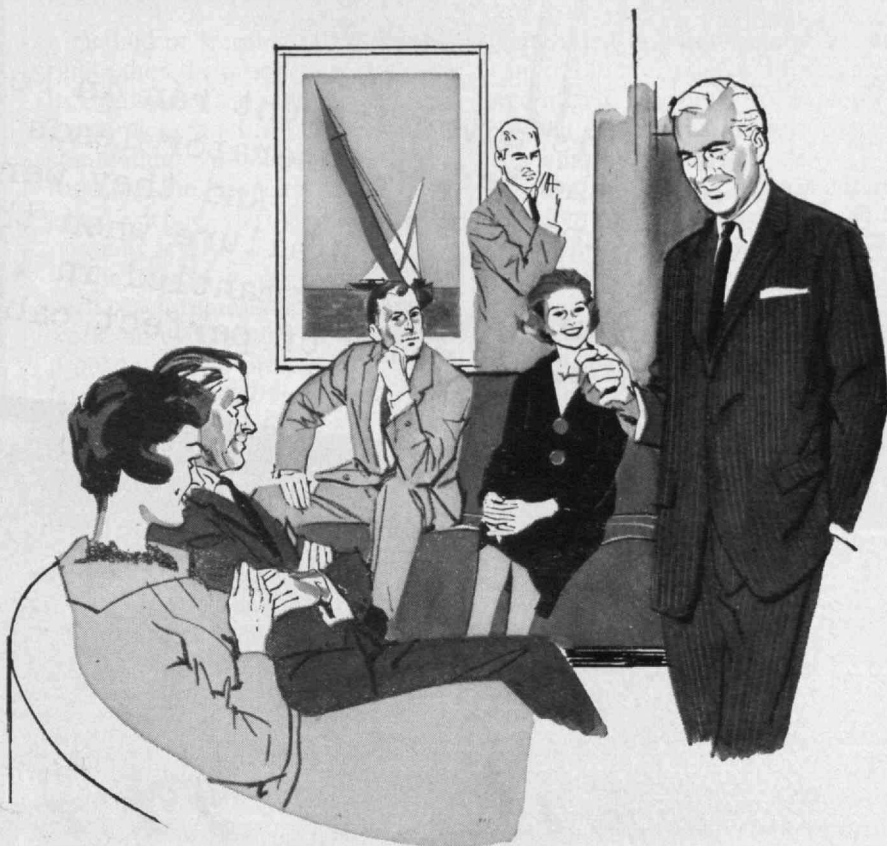


Education: Wayne University,
B.A., '56

Employment Record: Joined
New York Life (full time)
'56. Member, Star Club '56,
'57, '58; Top Club '59-'60

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Men Whom the Years Touch Lightly

Now and then you meet a man who seems young and vigorous to a degree that belies his age. People who have known him for years are apt to say admiringly, "*How* does he do it?"

Often, part of the *How* is his ability to delegate some of his most taxing and time-consuming responsibilities—and to his advantage. One effective means is reliance on an Investment Management Account at the Trust Company.

UNITED STATES TRUST COMPANY

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When this advertisement ran in February 1940, the Kerite generator leads had been operating 30 years. And they were still operating without failure when the turbo-alternators were dismantled in 1955 .. for a total of 45 years of perfect cable service.

BE GUIDED

*by facts, not claims
by service records,
not initial tests
by experience,
not prophecy*

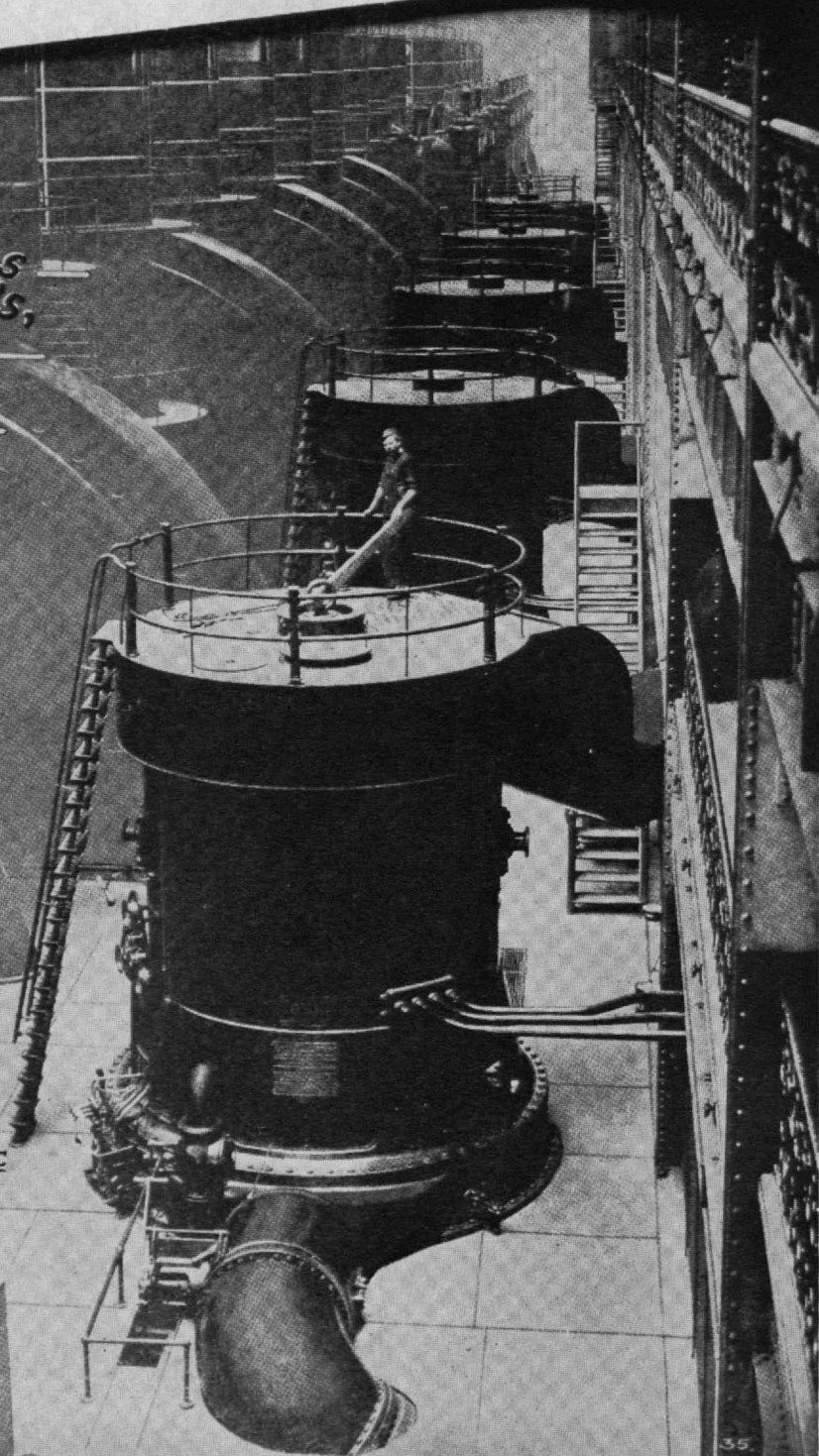
The 11,000 volt generator leads on these Turbo-Alternators of the 59th Street Power Station of the Interborough Rapid Transit Co., New York City, are all single conductor braided

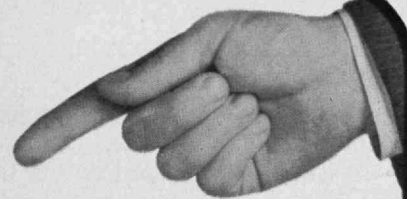
KERITE CABLES

INSTALLED IN
1909, 1910, 1911

They have all given
and are still giving
continuous and satisfactory service.

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... were designed without any of the accurate methods now used to determine conductor size. They were overloaded throughout their lives, and although they were installed in brass pipes and operated at 11,000 volts, they were protected only with a non-conducting cotton braid.

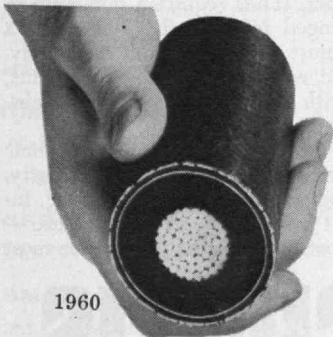


1909

In 1946, one lead was removed, reeled, and shipped to the Kerite factory for investigation.

In spite of 36 years of thermal abuse, almost constant electrical discharge at its surface, and the physical handling involved in its removal and shipment, the minimum 60-cycle A.C. breakdown was above 90 KV with the average 10 KV higher.

Kerite engineers have pioneered improvements in almost every element of generator cable... but the consistently high qualities and long life of the Kerite insulation remain the same.



1960

THE KERITE CO.
30 Church St.
New York 7, N. Y.
Sales offices in principal cities.



Education in Art

(Concluded from page 27)

a method of learning is emphasized rather than the production of Art for its own sake. Dormant creative ability is released with the objective of stimulating visual perception and fostering the capacity to plan, organize, define, clarify, and integrate on many levels.

The course is organized in two parts, each representing a semester's work of eight hours a week, and problems are so presented as to differentiate between visual and verbal expression. In the beginning, students are led to produce work, despite their lack of "talent" or "skill," in which they feel a sense of accomplishment and through which they gain courage to learn by doing. Imagination is challenged to search for form in accidental effects—visual play which perhaps had its origin in primitive man. Exploitation of the accidental as a method of creating visual form is by no means new, its practice was advocated by Leonardo da Vinci when he became intrigued with the images in clouds and cracked plaster. Recognized as an element of modern art, such activity creates purpose. The results generate a degree of confidence that no amount of conscious effort by the inexperienced could produce.

There is a continuing effort to keep this spontaneous process alive in exercises in composition, visual patterning, space organization, color dynamics, balance, proportion, scale, etc. Studio procedure in the second term is individually directed, allowing the student to formulate and execute projects in a wide variety of media. Having gained the confidence to create visual form and assimilated the basic principles of de-

sign in the first term, the student is prepared to explore more complex problems of art. Some are primarily interested in painting and sculpting in traditional media. Most are encouraged, however, to explore the visual possibilities of new concepts, techniques, and materials.

It is this kind of experimentation, seldom found elsewhere, that M.I.T. students perform differently than students at other colleges. Less inclined to work in conventional media, they frequently relate visual problems to concepts, techniques, and materials with which their specialized training has made them familiar. As a result, the projects executed are extremely varied, not only in media but in form and content as well. This approach is appropriate at M.I.T., because the specialist with a sensitivity to visual values can do much to reveal unprecedented dimensions in light, color, texture, and form inherent in modern science and technology, yet unfamiliar to the artist.

Through such activity, misconceptions about science as an enemy of art are dispelled and technology is recognized as a tool for aesthetically restructuring our visual environment. As one of the few disciplines in which inventiveness can be realized regardless of academic background, participation in this one gives students confidence to meet challenges in many fields of human activity. No less a factor, the students' sensitivity to visual values becomes an active reality, assuring intelligent responses to the numerous forms of visual communication bombarding us daily. Most important, the creative process as experienced in Art develops critical inner standards and contributes to a student's maturity and self-realization.

WTBS Extends Its Range

THE M.I.T. STUDENT radio station, WTBS, now has an educational license which permits it to broadcast to much of the Boston area on the 88.1 megacycle FM band. It also has new studios in the Walker Memorial Building, which were opened with appropriate ceremonies on the evening of April 10, the Institute's 100th birthday.

WTBS has provided closed-circuit broadcasting to dormitories and fraternities for more than 14 years, and its operators have long aspired to reach a wider audience. Its staff now includes more than 80 student announcers, engineers, and administrative workers, and they have procured modern facilities and technical equipment. In its daily broadcasts, the station will continue to present programs having wide appeal, including popular and classical music, jazz, folk music, news, interviews, and lectures.

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OXford 7-4131

Trend of Affairs

(Continued from page 16)

Astronomy on the Blackboards

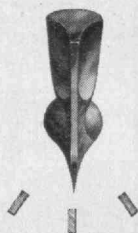
AS VENUS and the earth circle the sun, they come within about 26,000,000 miles of each other at times, and these occasions—584 days apart—are likely to be chosen henceforth for efforts to peer through the clouds that hide the surface of Venus.

The value of space probes such as the Russians sent off toward Venus this spring depends largely on what they carry. Professor J. F. Reintjes and his associates at M.I.T. now are studying what might be accomplished by electromagnetic devices aboard spaceships.

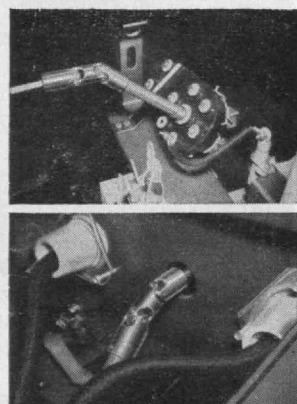
Optical observations and celestial mechanics have revealed what little we know about Venus. Astronomers are uncertain how rapidly it rotates; they have been unable to determine the axis of that rotation, and they can only guess about its magnetic field, and whether there are continents or seas beneath its clouds.

More may be learned soon from radio and radar observations. Such observations soon will be possible from space vehicles as well as from the earth's surface. How much more can radar see from a vehicle passing close to Venus than from gigantic installations on the earth? Certainly a radar within 10 to 15,000 miles of Venus should reveal the gross features of the surface. What kind of radar system would be most effective aboard a space vehicle? How can its findings best be transmitted back to us? These and many related questions are on some of the Institute's blackboards now.

(Continued on page 42)



CURTIS HELPS THIS SWITCH LIVE TO A RIPE OLD AGE



Pad-mounted transformers for underground power distribution systems are built to last a lifetime. They require a minimum of maintenance. Settings are changed infrequently. But when a change is required, this switch must operate smoothly and surely. To insure a long, dependable life, without freeze-ups or rust-outs, the manufacturer equipped it with a Curtis C-646 1" O.D. Stainless Steel double universal joint.

This kind of dependability is the stock-in-trade of Curtis joints — size for size the strongest universal joints designed for industry. Selected materials, precision engineering, continuous testing, inspection and quality control at every stage of manufacture — these are some of the things that make Curtis joints your most dependable buy.

14 SIZES
ALWAYS IN STOCK
3/8" to 4"

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SUBJECT: BUILDING



ELLIOTT HEDGE AND EVERETT SMITH TALK ABOUT COMPANY BANKERS AT THE NEW ENGLAND MERCHANTS NATIONAL BANK

—AND HOW THEY BUILD BUSINESSES WITH PERSONAL SERVICE

(Mr. Hedge and Mr. Smith are Vice Presidents of the newly formed New England Merchants Bank).

HEDGE: They did a beautiful job of building this one.

SMITH: They certainly did—and it's nice to think of it as *our* work, too. The New England Trust and The Merchants Bank were planning the financing even before our consolidation.

HEDGE: And it's just one of many jobs we've done together. Our two banks have shared loans for all kinds of companies.

SMITH: And we'll share *all* our loans, now that we're one bank. It should be easy. We always did work well together.

HEDGE: Why not? We've shared more than loans. We've always shared the same point of view. Our commercial officers at The New England worked closely with their customers—just like yours.

SMITH: It's more than close personal service, though. It's a—well, a *venturesome* attitude. Take electronics. The New England and The Merchants were in that field from the start.

HEDGE: Same thing with plastics, atomics, research. And now we can do even more.

SMITH: That's right. We have the increased capacity to take care of our customers . . . with more officers and more service than before.

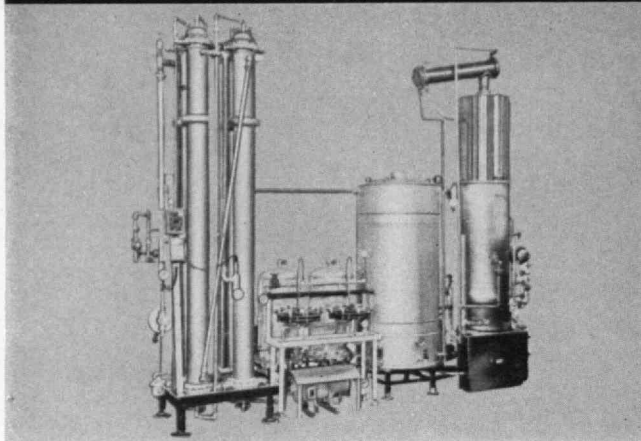
HEDGE: Not just in Boston, but all over New England.

SMITH: You know, Elliott, New England's going to do a lot of growing. And New England Merchants is going to do a lot of *helping*.

NEW ENGLAND MERCHANTS NATIONAL BANK
28 State Street, Boston
MEMBER F.D.I.C.

BARNSTEAD

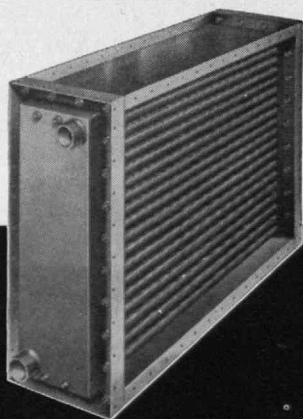
ENGINEERS PURE WATER TO YOUR SPECIFICATIONS



PHILCO CORP'S Lansdale Tube Division uses this "Train" of Barnstead Pure Water equipment in various manufacturing cycles. Operating cost is low because the greater part of the process water is repurified and fed back into the system for re-use. This "Train" includes a Barnstead 20 GPH High Purity Still, 150 gallon, heated, ultra-violet equipped tank to prevent growth of bacteria, two BD-10 Holders with special high purity Supercartidges®, an MF® 200 Submicron Filter, and Heat Exchanger. Another example of Barnstead's versatility in lowering manufacturing costs.

A. White, '26
T. Hartwell, '28
N. A. Everett, '48
V. C. Smith, '48
S. Beran, '58

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LOW AIRWAY RESISTANCE

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Heat Exchangers

AEROFIN CORPORATION
101 Greenway Ave., Syracuse 3, N. Y.

Trend of Affairs

(Continued from page 40)

That Fourth State of Matter

SANBORN C. BROWN, '44, Associate Professor of Physics at M.I.T., told Sigma Xi lecture audiences throughout the Southeast this spring that discoveries in plasma physics are making our times truly exciting. Plasma physics is concerned with "the fourth state of matter," in which there is a neutral collection of ions and electrons, in constant motion, with characteristics that we have only recently begun to appreciate. Thus far, Professor Brown thinks, our knowledge of plasma physics has been "far outweighed" by attempts to exploit it.

Our planet, he has been pointing out, is whirling through space surrounded by a shell of plasma; interstellar space is full of it, and whole galaxies have told us of their existence by means of radio signals emitted from their plasma structure. Now we can study in the laboratory such tremendous sources of energy as the stars have, and possibly learn to control such reactions. This, he maintains, makes our times comparable to those when men first realized that the earth was but one of a galaxy of similar bodies, and saw that they could learn about stars by studying the earth.

We have urgent reasons, according to Professor Brown, to study the plasma state. The ionosphere and the Van Allen belts which surround our atmosphere form a plasma blanket between us and outer space. Furthermore, this blanket's density could be increased—with high-altitude hydrogen bombs, for example—to block out communication with satellites and prevent the detection of missiles by microwave signals. More understanding of basic physics is needed, too, to design practical thermonuclear devices.

Alumni Council Meeting

AT THEIR March meeting Alumni Council members heard briefly from President Stratton, learned that mailing of the 1961 Alumni Register will be completed by mid-May, received a final report on Centennial plans and an almost-final report on Alumni Day, and were told that more than 11,000 Alumni had contributed some \$461,000 to the current Alumni Fund.

Speakers were Frederic W. Watriss, '41, Assistant Treasurer, and Vernon M. Ingram, Associate Professor of Biochemistry. Mr. Watriss discussed Technology Square, the new research and development center in which M.I.T. and Cabot, Cabot and Forbes are participating. Attractive space at rentals lower than Boston will appeal to organizations which value proximity to M.I.T. and Harvard, while the City of Cambridge will benefit greatly from the reclaiming of what was, in large part, a slum area. The ground is now cleared and building will be started this summer.

Dr. Ingram explained his work with hemoglobin cells, both normal and abnormal, in particular the so-called sickle cells. Anemia caused by these cells is especially prevalent in areas of Africa where malaria is endemic, resulting in infant mortality as high as 80 per cent.

Members and guests at the 351st Council meeting numbered 152. Association President Clarence L. A. Wynd, '27, presided.

(Concluded on page 44)

Thinking Man's Climate



Long since, Cabot has maintained its research headquarters in Cambridge's Research Row, in the heart of what has been called "the biggest, fastest-growing science-based complex in the U. S."

A heady, stimulating climate, this — spectacular for space-age accomplishments. Yet the atmosphere at Cabot is quietly different. Here, science is not concerned with electronics, or the myriad problems of putting a man into space.

Here, instead, science searches for ways to add extra mileage to automobile tires . . . to make white paints whiter . . . to make ceramics more beautiful . . . to make better and more economical raw materials for American industry.

Here, the victories of science are less spectacular — but, perhaps, no less important. For here, by laying the foundations for better, more useful, and more economical products, science serves industry, the consumer, and the economy — no small contribution to the preservation of a strong America.

For Industry, from Cabot:

CARBON BLACK — the world's most complete range . . . more than 50 different grades, each with a specific industrial use.

CAB-O-LITE® (Cabot wollastonite) — as a paint pigment, this versatile, uniform calcium silicate has more desirable properties than other extenders used singly or in combination. Excellent for all types of paint, and for all types of ceramics.

PT® PINE TAR PRODUCTS — these versatile quality controlled materials improve the performance of a wide variety of products, in-

cluding: rubber, paint, cordage, oakum and insecticides.

CAB-O-SIL® — this unique airborne silica, in extremely small amounts, greatly improves an enormous variety of products. Remarkable for its unusual combination of properties, it's equally effective as a thixotropic, thickening, gelling, suspending, flattening, reinforcing, anticaking, and antislip agent. Used in plastics, lubricating oils, greases, paints, varnishes, lacquers, rubber, sulfur, insecticides, pharmaceuticals, cosmetics, and many other products.

OTHER PRODUCTS INCLUDE: CHARCOAL, CHARCOAL BRIQUETS, OIL, NATURAL GAS, NATURAL GASOLINE, LIQUEFIED PETROLEUM GASES, PORTABLE WELL DRILLING AND SERVICING EQUIPMENT, OIL FIELD PUMPING EQUIPMENT AND STEEL FABRICATION.

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Trend of Affairs

(Concluded from page 42)

SCF Telephone Conference

SECOND CENTURY FUND leaders in 16 areas took part in a private-line telephone conference on March 20, at which they reported gifts and pledges totaling \$1,-723,766. President Julius A. Stratton, '23, addressed the group from the Kresge Auditorium at M.I.T., and General Chairman John J. Wilson, '29, spoke to them from the Palace Hotel in San Francisco.

Philip H. Peters, '27, Chairman of the Area Organization, was the host, and the spokesmen for the participating areas were *William B. Bergen*, '37, Baltimore; *Robert C. Dean*, '26, Boston; *Philip L. Coleman*, '23, Chicago; *Charles H. Smith, Jr.*, '42, Cleveland; *John Lawrence*, '32, Dallas-Fort Worth; *Thomas F. Morrow*, '35, Detroit; *Frederick H. Dierks*, '12, Kansas City; *Charles H. Toll, Jr.*, '23, Los Angeles; *C. George Dandrow*, '22, New York City; *William J. Wiley*, '29, Philadelphia; *Howard J. Samuels*, '41, Rochester; *Gaynor H. Langsdorf*, '32, San Francisco; *Richard J. Donohoe*, '39, Washington, D. C.; *Haskell R. Gordon*, '38, Worcester; *Craig P. Hazelet*, '18, Louisville; and *Bissell Alderman*, '35, Springfield.

The largest sum reported from a single area was \$427,067 from Boston, and the next largest \$270,615 from New York. The Worcester area reported it had raised 126 per cent of its quota; Louisville had met 91 per cent of its quota, and Rochester was within 85.5 per cent of its quota at the time of these reports.

NEW HORIZONS

Armored Strength Member Cables

BIW has perfected an armor which not only protects the electrical cable but also serves as a supporting member for suspended equipment.

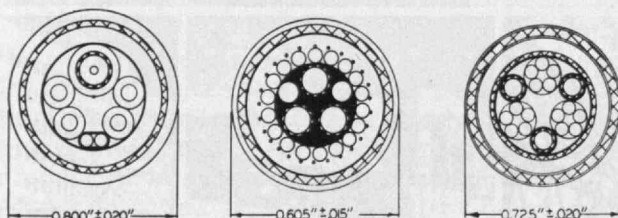
The armor consisted of woven strands of flat stainless steel or other material as determined by the physical and environmental requirements. Power cables, TV camera cables, control cables with audio circuits and electronic cables have been manufactured using this strong, protective armor. Typical applications include cables for towing underwater swimming devices, dropping and hoisting of detection and measuring equipment into water or oil wells and for other requirements where cables are reeled and unreel under tensions.

Finished cables can be built with high strength-to-weight ratios using this armor so that the cable floats but still maintains a 3000 pound breaking strength. Since the strands are flat, this type of armor adds very little to the unarmored cable diameter. This armor virtually eliminates kinking and

twisting thus relieving strain on the conductors as well as strengthening the cable.

These cables are designed and made to order to meet your specific problems. If your application requires a high strength electrical cable, or a high strength cable combined with flexibility and light weight, we would be pleased to discuss your problem and suggest a solution.

A few cross-sections of cables already designed and in use are shown below.



BOSTON INSULATED WIRE AND CABLE CO., BOSTON 25, MASS.



Frank Shull, III, (center) discusses a life insurance program for A. Richard Malkin and his wife Marjorie. Mr. Malkin is a Contract Negotiator for the Federal Systems Division of IBM.

The early success of Frank Shull, U. of Maryland, '58 — some observations

Following his first full year of life insurance selling, Frank Shull was named "Most Valuable Associate" of his agency. And not the least of his accomplishments that year was the sale of nearly \$800,000 of new life insurance.

To achieve success in a new career so rapidly is unusual — but less unusual in a New England Life sales career than in many others. There are good reasons. Tangible reasons, such as screening and training. Our candidates must, from the start, measure up to demanding standards. Then they participate in programs of study and practice at a General Agency, under the expert supervision of men who are themselves eminently successful. Finally, special schools at our home office hone their skills even further, building confidence along with competence.

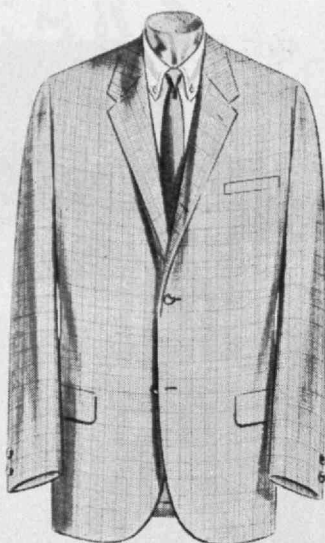
But there are also intangible reasons for success — the variables in each of the candidates — ambition, motiva-

tion, character. The first may well determine his income, the second his attitude toward his profession, the third the manner in which he serves his clients. There can be no real success, early or otherwise, unless a man has all three attributes in the highest form.

If a career with New England Life sounds good to you, let us know. We'll see that you receive more information about the opportunities for men who meet our requirements. Write to Vice President John Barker, Jr., 501 Boylston Street, Boston 17, Mass.

NEW ENGLAND LIFE

New England Mutual Life Insurance Company: Founder of mutual life insurance in America in 1835. All forms of individual and group life insurance, annuities and pensions, group health coverages.



**no one else in America has
OUR EXCLUSIVE LIGHTWEIGHT SUITS
made on our own distinctive models**

We have an unusually comprehensive and good-looking selection of cool, comfortable suits...all reflecting our standards of quality and taste...and all moderately priced. Included are:

Our New Orlon® Acrylic and Dacron® Polyester Town Wear Suits, \$60

Distinctive Dacron® Polyester and Worsted Tropicals, from \$80

Our Remarkable Brooksweave Suits, \$49.50*

Lightweight Dacron® Polyester and Worsted Gabardines, from \$95

Our Traditional Cotton Seersucker Suits, from \$35

Wash-and-Wear Dacron® Polyester and Rayon Suits, \$42.50

Our Washable Cord Suits, \$35 and \$39.50

*Dacron and cotton

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Individuals Noteworthy

(Continued from page 8)

New Posts

NAMED in the news recently were the Alumni whose elections, promotions, and appointments are reported below:

William C. Foster, '18, as President, the new United Nuclear Corporation . . . *Philip S. Brown, '20*, as Vice-president, Hartford Accident and Indemnity Company . . . *James F. Brittain, '22*, and *Alexander J. Bone, '24*, respectively, as President and as a Director, Boston Society of Civil Engineers . . . *Hartselle D. Kinsey, '24*, as Vice-president, Union Carbide Corporation;

Ralph F. Gow, '25, as a Director, Miniature Precision Bearings, Inc., Keene, N.H. . . . *Karl R. Van Tassel, '25*, as President, the A. B. Dick Company, Chicago . . . *Harold E. Edgerton, '27*, as a Director, Wyle Laboratories, El Segundo, Calif. . . . *William Arnett, Jr., '33*, as Chief Engineer, York Research Corporation, Stamford, Conn. . . . *John R. Wiley, '33*, as President, The Wings Club, New York;

Richard S. Robinson, '36, as Vice-president, Arthur D. Little, Inc., Cambridge, Mass. . . . *James D. McLean, '37*, as President, General Dynamics/Electronics Division of General Dynamics Corporation . . . *Charles J. Donlan, '38*, as Associate Director, Langley Research Center, National Aeronautics and Space Administration, Langley Field, Va. . . . *Forrest H. Judkins, '38*, as Manager of Manufacturing, Insulator Department, General Electric Company, Baltimore, Md. . . . *Herbert A. Finke, '39*, as Vice-president and General Manager, Bomac Laboratories, Inc., Beverly, Mass.;

Maurice A. Meyer, '39, as Vice-President, Adcole Corporation, Cambridge, Mass. . . . *Walter B. Brewer, Jr., '40*, and *William W. Drake, Jr., '51*, respectively, as Assistant General Manager, Engineering Division, and as Treasurer, Aerospace Corporation, El Segundo, Calif. . . . *William R. Stern, '40*, as Sales Manager, Itek Electro-Products Company, Cambridge, Mass.;

(Continued on page 48)

You Can Beat the Heat if You're in Any of the Very Comfortable **5 Haspel Refreshable Suits**



**3 MONTH
PAY-PLAN**

The Sophisticated Wash and Wear Clothing for Comfortable Summer Wear

The best way we know to keep cool wherever you go is to get a wardrobe of cool Haspel clothing. Haspel wash and wear suits require next to no care. Very little ironing, if any, is necessary.

The Sir Perior Cord

75% Dacron—25% Cotton

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The Sir Perior Covert Tones

67% Dacron—33% Cotton

39.95

Haspel Dacron-Orlon

50% Dacron—50% Orlon

45.00

Haspel Creslan

50% Creslan—30% Dacron—20% Rayon

45.00

Poplin Suits

65% Dacron—35% Cotton

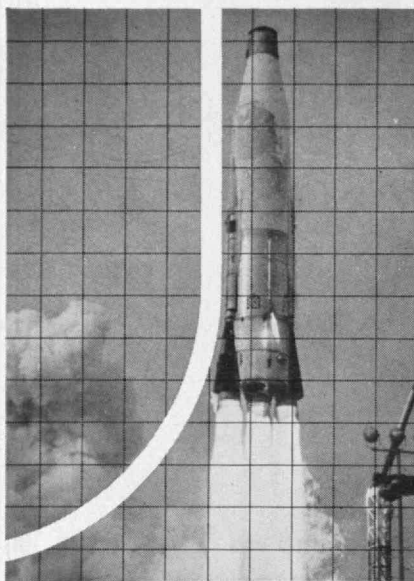
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Since 1954, when the Air Force ballistic missile program was accorded top national priority, Space Technology Laboratories has been engaged in virtually every major phase of research, development, testing and technical management of missile and space systems. STL's contributions have hastened the day of operational capability for Air Force ballistic missiles, and have been applied as well in satellite projects and space probes.

Today, as STL's activities expand in significance and scope, STL offers exceptional opportunity to the outstanding scientist and engineer whose talents and training will add to, and benefit from, the accumulated experience that has enabled STL to conceive and accomplish major advances in the state-of-the-art. STL's creative flexibility, anticipating and responding to the demands of space progress, ranges in application from abstract analysis to complex hardware fabrication for military and civilian space projects.

STL invites scientists and engineers to consider career opportunities in both Southern California and Central Florida. Resumes and inquiries directed to Dr. R. C. Potter at either location will receive meticulous attention.

SPACE TECHNOLOGY LABORATORIES, INC.

P. O. Box 95005 TT, Los Angeles 45, California
P. O. Box 4277 TT, Patrick AFB, Florida
a subsidiary of Thompson Ramo Wooldridge, Inc.

Individuals Noteworthy

(Continued from page 46)

Robert H. Stocker, Jr., '40, as Executive Manager, New England Fire Insurance Rating Association . . . *M. Spalding Toon, '40*, as President, Ohio Barge Line, Inc., Pittsburgh, Pa. . . . *Norman C. Michels, '41*, as Vice-president, Facility Planning and Appropriations, U.S. Steel Corporation . . . *Howard J. Samuels, '41*, as a Director, Rochester Telephone Corporation; *Ralph G. Mork, '42*, as Manager, Engineering Laboratory, IBM Federal Systems Division's Command Control Center, Kingston, N.Y. . . . *A. Donald Moll, '43*, as Vice-president and Sales Manager, Minneapolis Electric Steel Castings Company . . . *Lewis A. Rupp, '43*, as Executive Vice-president, Ionics, Inc., Cambridge, Mass.;

John O. Atwood, '45, as Product Line Manager, Vat & Sulfur Dye-stuffs, General Dyestuff Company Division of General Aniline & Film Corporation . . . *Rae T. LaPier, '47*, as Director, Administration, Planning and Control, Research and Development Department, Colgate-Palmolive Company . . . *Roger L. Sisson, '48*, as Manager, Program Analysis, Technical Staff, Computer Products Operations, Aeronutronic Division, Ford Motor Company;

Wm R. Bidermann, '50, as Chief Production Engineer, Whittaker Gyro Division, Telecomputing Corporation, Van Nuys, Calif. . . . *Herman C. Fischer, '50*, as Chief, Cement Activities Section, Johns-Manville Company, Manville, N.J. . . . *Norman Rudnick, '52*, as Director, Transducers and Materials Laboratory, Gulton Industries, Inc., Metuchen, N.J.;

Robert A. Sherman, '55, as Assistant Comptroller, Kodak Park Works, Eastman Kodak Company . . . *James S. Hetherington, '58*, as Engineering Manager, Vacuum Furnace Division, Richard D. Brew and Company, Inc., Concord, N.H.

Memorial Exhibit

CLEVELAND's Health Museum has dedicated an exhibit of "Why Our Nation Grows" to the memory of Howard Whipple Green, '16, a noted statistician and leader in health and welfare work.

(Continued on page 50)

this is my
MEXICO
the friendly land

Let your spirit
expand in this land
of magic charm...

Visit us. See our
archaeological sites;
enjoy Mexico's
mild climate; relax
in the pleasant
atmosphere of this
land of friendship.

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MEXICAN GOVERNMENT TOURISM DEPARTMENT
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Moment of Truth...

Remember? The bluebooks were passed, the exam questions posted... then the panicky moment of blankness before facts gradually swam into focus. Final exams were the crucible of study and, in a real sense, forerunners of the many "moments of truth" for which each of us must prepare throughout life.

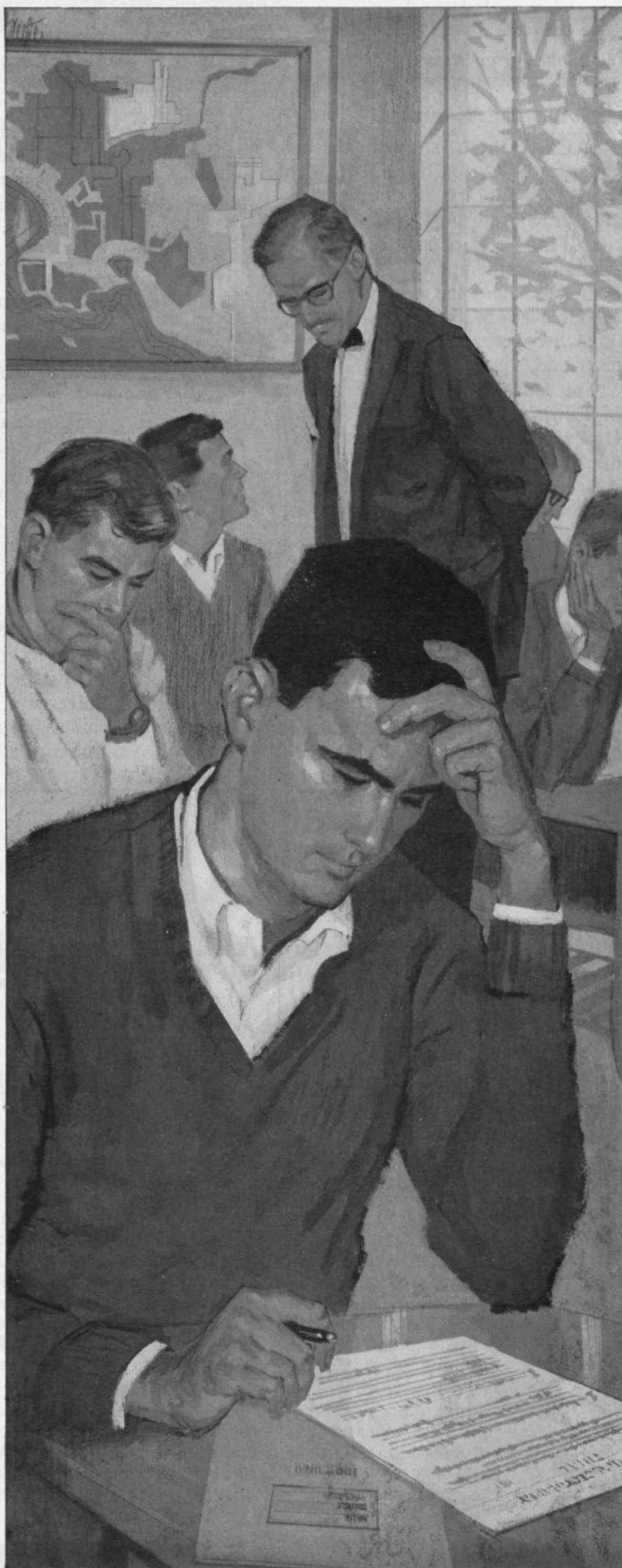
Preparation for decisive moments is man's strategy in facing his future. But this planning needn't always be a lonely, uncertain affair. The experience and understanding of a Connecticut Mutual Life man can greatly facilitate the wise safeguarding of your family... and provide for the needs that loom ahead. Use the counsel of this objective partner. Out of a wide variety of policies and payment methods, a CML man will prepare the plan best suited to secure your dreams. He's a helpful man to talk with.

Dividends paid to policyholders for 115 years*

Owned by its policyholders, CML provides high-quality life insurance at low cost and gives personal service through more than 300 offices in the United States.

**Dividend scale for 1961 increased 12½% over 1960.*

Connecticut Mutual Life
INSURANCE COMPANY • HARTFORD



Individuals Noteworthy

(Continued from page 48)

Art for the Centennial

THE CENTENNIAL SHOW in the art gallery of the Charles Hayden Memorial Library featured paintings, drawings, prints, and sculpture from the collections of M.I.T. Alumni. Contemporary work predominated, and the oldest painting shown was Manet's *Self-Portrait*, done five years before M.I.T. was chartered.

The lenders included the widow of Edwin S. Webster, '88; Robert D. Patterson, '20; Julius A. Stratton, '23; Paul Tishman, '24; R. Kirk Askew, Jr., '25; Samuel Glaser, '25; B. Sumner Gruzen, '26; James R. Killian, Jr., '26; John J. Wilson, '29; Mrs. Ernest B. Dane, Jr., '30; Nathaniel Saltonstall, '32; Armand P. Bartos, '35; Constantin A. Pertzoff, '35; Max Wasserman, '35; Christine F. Magriel, '38; I. M. Pei, '40; Walter A. Netsch, Jr., '43; Arthur E. Vershbow, '43; Jephtha H. Wade, 3d, '45; James L. Phillips, '47; John R. Myer, '52; Alfred C. Holland, '53.

Honors to Alumni

MEDALISTS and recent recipients of other distinctions include:

Edward C. Keane, '22, and *John S. Bethel, Jr.*, '38, respectively, the Desmond Fitzgerald Medal, and the Sanitary Section Award, by the Boston Society of Civil Engineers . . . *Harry Wexler*, '39, a Career Service Award, by the National Civil Service League . . . *I. M. Pei*, '40, the 1961 Brunner Award, by the National Institute of Arts and Letters;

Captain Kenneth M. Tebo, U.S.N., '47, the Navy Commendation Medal . . . *Captain Richard J. Hayes*, U.S.A.F., '54, the American Rocket Society's Annual Award for 1960 for the best paper by a graduate student.

Faculty Notes

NEWLY ELECTED President of the Institute of the Aerospace Sciences is Professor *H. Guyford Stever* of M.I.T. . . . Newly named Dean of the Boston University Graduate School is *Richard S. Bear*, former Professor of Biophysics at M.I.T.



PAUL A. SAMUELSON, Professor of Economics at M.I.T., has served on a Task Force for the American Economic Association concerned with a fundamental overhaul of economics teaching in high schools. Economics is the first of the social sciences to undertake reforms in secondary school work such as have been launched in physics and mathematics.

Symbol of Quality...

and Leadership

in gas and electric home appliances

Whirlpool Corporation has grown from a manufacturer of only home laundry equipment to the world's foremost manufacturer of a complete home appliance line . . . both gas and electric. This growth is the direct result of a vigorous effort to provide American households with the best and most meaningful advancements.

To insure continuity of such advancements, Whirlpool employs over 1,000 people in its research and engineering laboratories alone. Out of these laboratories have already come such developments as the first gas and electric refrigerators

which prevent the formation of frost in the food compartments, the first remote control room air conditioners, a gas range surface unit so precisely controlled that you can fry an egg in a paper plate, and an automatic clothes dryer that measures the moisture in the clothes and tempers the heat accordingly.

In Whirlpool's six plants and administrative facilities nearly 14,000 employees are working to produce and distribute a full-line of home appliances that measure up to the highest standard of quality—that of the American homemaker.

WHIRLPOOL CORPORATION, St. Joseph, Michigan

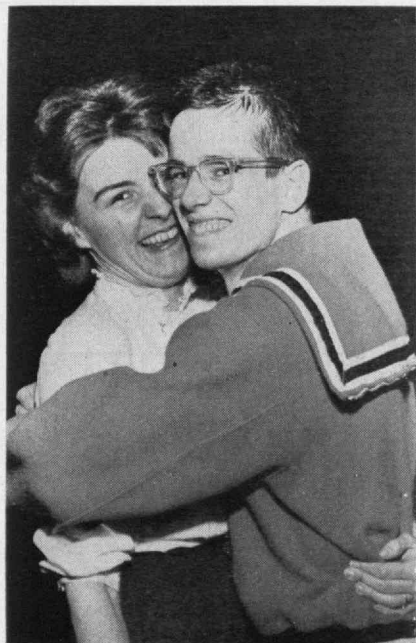
In Navy Research Post

JOSEPH H. ENGEL has been appointed associate director of the Operations Evaluation Group, a part of the M.I.T. Division of Sponsored Research which has carried out operations research for the Office of the Chief of Naval Operations since 1945. He will assist Jacinto Steinhardt, Director, in coordinating the activities of the group's three divisions (the Operations Evaluation Division and the Naval Warfare Analysis Division in Washington, and the Applied Science Division in Cambridge).

Dr. Engel, a mathematician who studied at the College of the City of New York and the University of Wisconsin, won the Distinguished Flying Cross for flying 30 missions in B-29's.

Encyclopaedia Writers

M.I.T. is represented among the new contributors to the 1961 edition of the Encyclopaedia Britannica by Professors *Robin Boyd*, *Carl T. Devine*, *Harold E. Edgerton*, '27, *Carle R. Hayward*, '04, *Andrew B. Jack*, *Rene H. Miller*, *Wayne B. Nottingham*, and *Walter Wrigley*, '34; Dean *George R. Harrison*, and Dr. *Harriet L. Hardy* of the Occupational Medical Service.



DAVID LATHAM, '61, won the New England wrestling championship in the 130-pound weight class in this year's tourney in the M.I.T. Armory. He is shown here accepting his wife's congratulations.

ENGINEERS METALLURGISTS PHYSICISTS



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By Wesley Peterson. An up-to-date treatment of coding theory and systems for error-detection and error-correction. \$7.75

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Books

(Continued from page 28)

lic understanding of today's great engineering contributions to military and space technologies. Indeed, the word engineer appears only once, well towards the end of the book and only in an oblique way. Especially in the United States, where engineers have occupied a special position as instigators of social change, *Science and Government* is probably due for a round of polite but firm criticism on this score. At the very least, Sir Charles has slighted the great shift of American engineering emphasis, largely in the postwar period, towards systems concepts and a closer interlocking with science, both of which have had a pronounced effect upon the role of the engineer as a scientific adviser to government.

Sir Charles's historical observation that secrecy does not really impede scientific progress will also stir comment in the fundamental houses of American science. The science of which Sir Charles speaks throughout this book is, of course, not pure science at all but the large-scale systems developments which have been relatively well supported and which have indeed prospered behind locked doors because of forced draft. A great deal has been written on this subject already, and Sir Charles will doubtless rekindle some of the old fire.

A final comment about the great middle ground of political choices that lies between the life-and-death decisions in advanced societies: To C. P. Snow's brilliant observation about the need for more scientists to restore initiative in this whole area, one ought to add the need for a greater infusion of specialized knowledge of all kinds. This endless, workaday domain is where social and economic criteria are more widely practiced than at the life-and-death extremes of the political scale. Here there is urgent need for greater competence in all guises.

Technical Works

NEW PUBLICATIONS especially likely to interest Alumni of M.I.T. include:

Analysis and Design of Mechanisms, by Deane Lent, '42, Assistant Professor of Engineering Drawing at M.I.T. (Prentice-Hall, Inc., \$3.25).

Computation of the Potential, Charge Density and Free Energy of the Electrical Double Layer Around a Spherical Colloid Particle, by Arthur L. Loeb, Associate Professor of Electrical Engineering at M.I.T., and others (The M.I.T. Press, \$10).

Missile Configuration Design, by S. S. Chin, '46, Chief Aerodynamics Engineer, The Martin Company (McGraw-Hill Book Company, \$11).

Modern Flight Dynamics, by W. Richard Kolk, '51, with a foreword by Shatswell Ober, '16, Professor of Aeronautical Engineering, Emeritus, at M.I.T. (Prentice-Hall, Inc., \$7.50).

Science in Space, edited by L. V. Berkner and Hugh Odishaw, with contributions from Professor Bruno Rossi of M.I.T. and others (McGraw-Hill Book Company, \$7.).

The Teaching of Elementary Economics, edited by Kenyon Knopf and James Stauss, with contributions by Robert L. Bishop, Professor of Economics at M.I.T., and others (Holt, Rinehart and Winston, Inc., \$3.50).

(Concluded on page 54)

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Books

(Concluded from page 52)

THE TALE OF A POND, by Henry B. Kane, '24; Alfred A. Knopf (\$3.00). Reviewed by Richard H. Pough, '26, President, the Natural Area Council, the Association for the Protection of the Adirondacks, and the John Burroughs Association.

IT HAS been said that "a scientist is born every time a youth is first fired with curiosity concerning the wonders of the world about him." It is equally important if he is to be channeled into science that his curiosity be encouraged and opportunities provided for him to read the book of nature.

Few natural environments in the vicinity of our growing cities have remained as relatively undisturbed as ponds. Here any youngster can find a wealth of life on which to practice his powers of observation and test his ability to frame hypotheses to explain observed phenomena.

The Tale of a Pond is thus far more than just a beautifully written and illustrated book about the teeming life of a typical pond. As it tells what one boy found in his pond around the seasons and how he collected and studied its inhabitants, it suggests to the reader things it would be fun to do in his own neighborhood pond.

Everyone with children or grandchildren should see that they get this book the next time a present is called for. They should also see that the recipient is given help in setting up a few aquaria in which such pond dwellers as can be collected may be studied at close hand.

A Supplement to 'Technique'

THE M.I.T. YEARBOOK, *Technique*, has a 32-page supplement this year reviewing "A Century of Technology," in pictures that will interest many Alumni.

Included are views of the Mercantile Library on Summer Street where the first classes met, the Boston Back Bay district before and after the Institute was located there, the construction of the present main buildings in Cambridge, and the crossing of the Charles. The Class of 1873, the first student lunch room, the 1916 All-Tech Banquet in Symphony Hall, and many wartime and athletic events are also pictured.

The Editor-in-Chief was William R. Watson, '61; the centennial editor, John S. Maslanka, '61, and the layout editor, H. Reed Gregg, '63.

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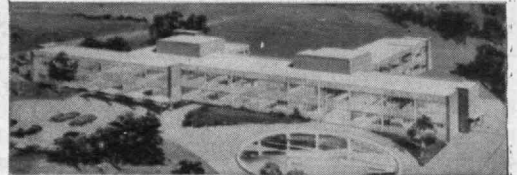
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Present research activities in Communications Techniques include:

OPTIMUM ANTENNA SYSTEMS FOR TROPOSPHERIC SCATTER

Theory involves a wide class of fading signals. Optimum systems, shown to exist in principle, surpass present diversity systems by perhaps 5-15 db. Major efforts involve analyzing fade-induced signal fluctuations for various receiving configurations, including both various diversity systems and more novel techniques thought to be closer to the optimum.

COMMUNICATION FEEDBACK TECHNIQUES

Various system concepts being examined as promising alternatives to redundant coding for error correction in digital communications links. Both repeat request and average improvement types of systems are being studied, including unsolved problems associated with fading and noise on the feedback channel.

MODULATION SYSTEMS FOR SATELLITE RELAY COMMUNICATIONS

Study of advanced signal modulation techniques for use in satellite relay communication systems. A special emphasis is being placed on techniques with reduced vulnerability to interference, and relation to various problems of synchronization and possible application for adaptive (communication feedback) techniques.

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Indicative of the calibre of the laboratory studies in communication techniques and the opportunities for individual scientific research, the following is a list of some papers recently accepted for publication in the literature:

- *Distortions of Angle Modulated Signals in Misaligned Linear Filters*, accepted for publication in Transactions IRE, PGCS.
- *Frequency Differences Between Two Partially Correlated Noise Channels*, accepted for publication in Transactions IRE, PGIT.
- *Binary Error Rates in Fading FDM-FM Communications*, accepted for publication in Transactions IRE, PGCS.
- *Binary Error Rates in Fast Fading FDM-FM*, accepted for publication in Proceedings IRE (correspondence).
- *On the Approach of a Filtered Pulse Train to a Stationary Gaussian process*, accepted for publication in Transactions IRE, PGIT.
- *A Theory of Antenna performance in Scatter Type Reception*, accepted for publication in Transactions IRE, PGAP.
- *Some Results in the Problem of Discriminating between Two Gaussian Processes*, accepted for publication in Transactions IRE, PGIT.

Communications scientists and engineers at ARL enjoy helpful inter-disciplinary relationships with other research groups:

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Club Notes

Dr. Charles Stark Draper Speaks in Jacksonville

The Jacksonville, Fla. M.I.T. Club held a dinner meeting at the George Washington Hotel, Saturday evening, February 18. Special guests were Dr. Charles Stark Draper '26, Head of the Department of Aeronautics and Astronautics and Director of the Instrumentation Laboratory at M.I.T., and Mrs. Draper. Dr. Draper spoke on the subject of missiles, with special emphasis on the Inertial Guidance Systems developed by the Instrumentation Laboratory and the part they have played in missile development. Dr. Draper was in Jacksonville to speak before Jacksonville University and a group of 26 outstanding science students in local high schools.

A social hour preceded the dinner. In addition to the Drapers, those attending were: Mr. and Mrs. Henry W. Dew '13, Mr. and Mrs. George W. Simons '15, Mr. and Mrs. Charles E. Richheimer '28, Tinsley W. Rucker, 3d '31, Mr. and Mrs. Arthur W. Avent '42, Mr. and Mrs. George A. Slifer, Jr. '43, Gab Ciccone '47, Mr. and Mrs. Vincent E. Lally '48, W. Stanly Gordon '50, Ernest F. Jensen '51, Capt. and Mrs. James T. Moore '55.—W. Stanly Gordon '50, Secretary, 1531 Alford Place, Jacksonville 7, Fla.

Second Century Fund Kick-off in Pennsylvania

On the evening of February 21, the Northeastern and Central Pennsylvania areas had a "kick-off" meeting to get the Second Century Fund underway. Host to the dinner meeting was U. A. Whitaker '23, President of AMP, Incorporated, who unfortunately could not be present. Chairman of the business meeting was Robert K. Hess of Philadelphia, who has responsibility for the Second Century Fund progress in these areas. The following area chairmen were present with their guests:

Adrian E. Ross '34, Wilkes-Barre-Scranton area chairman, Sprague and Henwood, Inc., with guests Louis V. Russoniello '40 and Leroy W. Janson '48; William C. McHenry '24, Bethlehem-Allentown area chairman, Pennsylvania Power and Light Company; Charles F. Springer '52, Reading Tube Corporation, taking the place of George J. Meyers, Jr. '29, Reading area chairman, with guest Kenneth G. Harms '51; John P. Connelly '28, York area chairman; Andrew R. Brugnoli '26, Harrisburg area chairman, Bethlehem Steel Company, with guests Robert K. Peterson '48, Marshall M. Holcombe '36, and Francis E. Thomas '17. Another dinner meeting was scheduled for March 29.—Robert K. Peterson '48, Secretary-Treasurer, 566 Brentwater Road, Camp Hill, Pa.



Left to right, Willis R. Salisbury '12, Honorary Secretary; Dean George R. Harrison, M.I.T.; Dean Athelstan F. Spilhaus '33, University of Minnesota; and Gerry E. Morse '30, Chairman Twin City S.C.F., at Twin Cities Club meeting.

Twin Cities Group Hears Dean George R. Harrison

The M.I.T. Club of the Twin Cities held its February meeting on Sunday evening, February 26, at the brand new Midland Hills Golf Club. Attending were 44 members and their wives, who enjoyed a cocktail hour and an outstanding Minnesota smorgasbord. Gerry Morse '30, Vice-president, Minneapolis-Honeywell, gave a most interesting talk on the personnel aspects of engineering, which was appreciated as much by the wives as the men.

Dean George R. Harrison of the Institute's School of Science addressed the group and answered questions concerning the Second Century Fund. His talk was extremely welcome and his warm, casual remarks brought the club members up to date on happenings back in Cambridge. Professor Athelstan Spilhaus '33, Dean of the Engineering School at the University of Minnesota, added his remarks and topped off an exciting evening with an informal gathering away from the dinner table.

This was one of our most successful Twin City gatherings. All Minnesota M.I.T. Alumni are cordially invited to attend future meetings.—Edward L. Bronstien, Jr. '51, Vice-president; Hendrie J. Grant '49, Secretary-Treasurer, 694 Lincoln Avenue, St. Paul 5, Minn.

Washington Club Holds Centennial Celebration

The M.I.T. Club of Washington, D.C., held its special observance of the 100th anniversary of the Institute on March 22, at a formal banquet preceded by a cocktail hour. Dr. H. Guyford Stever, Profes-

sor of Aeronautics and Astronautics, spoke on his profession and M.I.T.'s participation in this field. Captain S. H. Ivison, Jr. '41 was Banquet Chairman. Ernest W. Reisner '30, President of the Club, presided over the business meeting.

April 27 will be the date for our nominations meeting for 1962 officers. The Club has been active this year, and we are pleased to see the many new members who have attended the meetings. The M.I.T. Dames have been of tremendous help in arranging table decorations and social hours before the meetings.—Gilbert H. Lewis '51, Secretary, 9914 Grayson Avenue, Silver Spring, Maryland.

Professor Eli Shapiro Speaks to New Haven Club

Twenty-seven members and guests of the M.I.T. Club of New Haven met on Monday evening, February 27, at the Colonial House in Hamden to hear Professor Eli Shapiro of the Institute's Industrial Management School. His talk on "Management in an Expanding Technology" was well received and evoked a lively discussion afterward. Earlier in the evening, Eben Haskell '26 gave a short presentation on the progress of the Second Century Fund.

All Alumni of the New Haven County area are invited to the Club's annual summer outing at the Pine Orchard Club. This year the date will be advanced to either Saturday, May 27, or Saturday, June 3, to avoid some of the conflicts which arise later in June. Details will be coming early in May, but reserve these dates now.—John A. Gunnarson '46, Corresponding Secretary, 14 Old Hickory Lane, Branford, Conn.

Lehigh Valley Club Hears Report on Africa Program

At the winter meeting of the M.I.T. Club of the Lehigh Valley, February 23, members and guests heard J. Daniel Nyhart, Research Associate in the School of Industrial Management at M.I.T., speak on "M.I.T.'s Program in Africa." Both speaker and subject were well suited to conveying to our guests, prospective M.I.T. students and their high school counselors, a good impression of the breadth and calibre of the educational opportunities that are available at the Institute.

The group met at the Bethlehem Club for dinner and the meeting which followed. As club business, M. Arnold Cope land '40, President, announced a committee which is arranging for our observance of the 100th Anniversary of M.I.T. Henry Moggio '28, chairman of the committee, described plans which will include a dinner for members and wives on Thursday, May 4, at the Lehigh Valley Club in Allentown. Dean John E. Burchard '23 of M.I.T. will be the principal speaker, and guests from educational institutions, industry and civic life will be invited. As further club business, a nominating committee was appointed with Jack Smyser '35 as chairman.

Mr. Nyhart was well qualified to talk about Africa, having recently returned from an African assignment of several years' duration. He gave a most enlightening report on the program of M.I.T. Fellows in Africa, by which graduates with master's degrees in Industrial Management are placed as staff assistants in some of the new African governments. Benefits to the governments include educated talent on a level which is very scarce in Africa and a means of liaison with experience in other countries; the men receive two years of invaluable experience and unusual opportunities for immediate use of their training. It was suggested that we should not lose faith in African nations because of the present trend from pro-West toward neutralism. Their developing attitude appears to be: "Select the best from East and West." To withhold assistance in worthwhile projects is to force stronger alliances with the opposition.—William V. Bassett '39, Secretary, 510 Delaware Avenue, Bethlehem, Pa.

Boston Stein Club Hears Noted Heart Surgeon

At the Mid-Winter Meeting of the Boston Stein Club on February 15, members and guests heard Dr. Howard Frank, M.D. tell the dramatic story of medical science's advances in heart surgery. Dr. Frank, a distinguished surgeon, is associated with Harvard University Medical School and the Beth Israel Hospital. He gave an illustrated demonstration, and discussed what hope the new developments hold for heart patients. The program was preceded by dinner at the Faculty Club, M.I.T.—Norman Gardner '53, Secretary, Metalonics Corporation, Inc., 40 West 3rd Street, South Boston, Mass.

Hartford Club Hears Talk on VTOL Aircraft

A banquet-style Chinese dinner was the fare for most of the 63 Alumni, wives and friends of the M.I.T. Club of Hartford attending the Midwinter Dinner Meeting on February 14. The meeting was held at the Chinese Hitching Post in Newington, Conn., and featured a talk by Donald W. Robinson of Kaman Aircraft Company, on aircraft that take off and land vertically.

Mr. Robinson described the economic limitations of helicopters for short range commercial transportation: limited speed and small number of passengers. He indicated the logical application of VTOL aircraft for commuter transportation with ranges up to several hundred miles. Problems of stability and control inherent in VTOL were discussed. Mr. Robinson elaborated on various designs of VTOL equipment: namely, use of rotors for lift in combination with propellers for forward movement, tilting wings and engines to provide thrust either vertically or forward, and utilization of wing flaps for downward deflection of thrust. At the close of the talk, two interesting films were shown, one depicting development of British VTOL equipment capable of speeds up to 190 miles per hour, and the other describing VTOL research and development at Kaman Aircraft.—Joseph Kozol '54, Secretary, 642-A Windsor Avenue, Windsor, Conn.

Southern California Club Plans Centennial Schedule

A really enterprising year is underway here in Southern California for our club. With new officers and renewed enthusiasm for our centennial year, we are planning a full and interesting schedule. As of this issue of The Review, we will have had two club meetings, which will be covered in later notes. The Board of Governors met in February to prepare activities for the coming year. One of the largest turnouts of the board in the last year gives promise of a good future. The board meetings are held at the Chamber of Commerce building at 404 South Bixel Street on the third Monday of each month.

Sam Lunden '21 received special congratulations from the President of Town Hall at their January meeting for his successful campaign to increase their membership. We hope it will rub off on us, as Sam is a member of this year's board.

The Second Century Fund committee has been extremely active. The regular board meeting in March coincided with the special nationwide closed circuit report of the Second Century Fund committee, and afforded an opportunity for a joint meeting.

Donald Gilbertson '53 had to resign from the board because of the press of other affairs. His place was filled by Mark Franklin '51.—Albert A. Livingston '49, Secretary, 3850 Wilshire Boulevard, Los Angeles 5, Calif.; Richard J. Steele '46, Assistant Secretary, 15519 Talbot Drive, La Mirada, Calif.

Baltimore Club Hears About Space Projects

The M.I.T. Club of Baltimore held its annual meeting March 14. William B. Bergen '37, President of the Martin Company and the featured speaker, described the part which his company is playing in the exploration of space and related projects.

The following officers were elected for the coming year: President, Hyman J. Verner '23; Vice-presidents, Philip V. Darling '40, Charles A. Speas '42; Secretary, Henry G. Gastrich '44; Treasurer, Clinton B. Conway '24; Assistant Treasurer, Leon L. Baral '38; Directors, William H. Gable '51, Kenneth Jarmolow '48, Herman L. Meyer '40, C. Kenneth Jones '32, John F. Christopher '48, Edward Y. Wing '42, Carl L. Reed '27.—Mrs. Richard L. Steiner '40, Secretary, 5219 Putney Way, Baltimore 12, Md.

Monterrey, Mexico, Alumni See Horovitz's Films

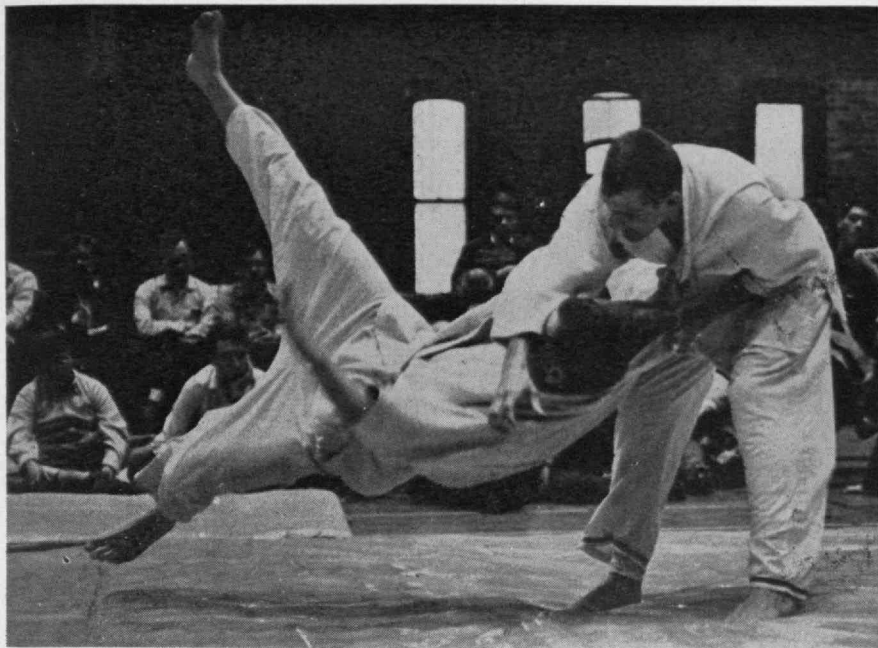
The visit to Monterrey of Oscar H. Horovitz '22 and his wife, from Newton, Mass., was the opportunity to call a special dinner meeting of Alumni and their wives; the younger ones brought their dates. Mr. Horovitz showed two wonderful movies. Alumni attending were: Alberto P. Gonzalez '01, Eduardo D. Belden '17, Lauro Martinez Carranza '20, Viviano Valdes '21, Bernardo Elosua '23, Leonardo Siller '28, Rodolfo J. Gonzalez Garza '34, Eliot Camarena '44, Manuel R. Llaguno Farias '46, Rodolfo F. Barrera '49, Raul Sada Rangel '49, Jose V. Ferrara '54, Francisco R. del Valle '54, Gustavo A. Herrera '55, Patricio O. Ferrara '57, Harry Thomas Kelly '57, Juan F. Llaguno Farias '60.—Eliot Camarena '44, Secretary, Nylon de Mexico S/A, Monterrey, N. L. Mexico.

Professor Padelford Speaks To Combined Groups on UN

The M.I.T. Club of Oregon held a joint dinner meeting with the World Affairs Council of Oregon on April 19. Professor Norman J. Padelford, Political Science Professor in the Department of Economics and Social Science at M.I.T., spoke on "Changing U.S. Policy in the Changing UN." The Club also elected a new slate of officers at this meeting.—Malcolm A. Blanchard '36, Secretary, 2546 S.W. Vista Avenue, Portland 1, Ore.

Israel M.I.T. Club Elects New Officers

At the January meeting of the M.I.T. Club of Israel, in Tel Aviv, the following officers were elected: President, George Zeitlen '39, Dean of Civil Engineering, Israel Institute of Technology; Vice-presidents, Chaim Swirsky '33, of Tel Aviv, Captain Arie Kaplan '52, of Haifa, and A. Paltiel Makleff '53, of Ramat Hasharon; Secretary-Treasurer, Isaac Minkoff '56, Department of Metallurgy, Israel Institute of Technology, Haifa, Israel.



The Students From Other Lands Perform

STUDENTS from 74 countries pooled their talents for International Week at M.I.T. in March. In addition to the games and dances pictured here, they sponsored a panel discussion of the International Youth Corps proposed by President Kennedy, lectures by two former justices of the court in Havana on "Cuba Today," and an International Dinner for the Faculty, administrators, and other students of the Institute.

The judo performers above are Bob Gilmore, '62, of Long Island City, and Klaus Arons, G, from

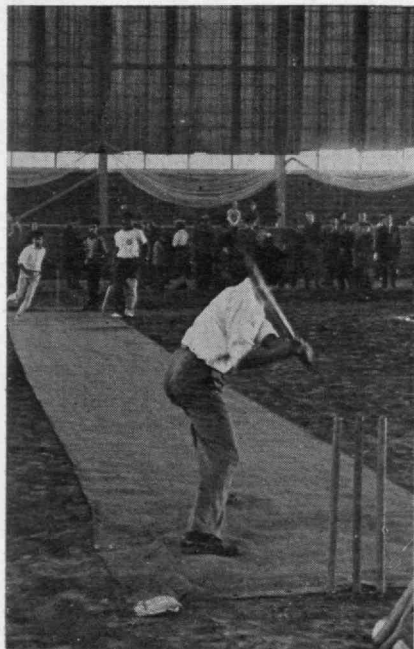
Germany. The lady from the Philippines leading the dancers above is Zenaida Gonzales, who is a graduate student in Chemical Engineering.

The cricket players below are (from left to right) Ramesh Chauhan, '61, Vijaykumar Shah, '61, and Pesi Dastur, G, all of whom are from India.

Six of the members of the committee responsible for International Week affairs are also pictured below. They are (from left to right) Muili Salami, '63, Nigeria; Vijaykumar Shah, '61, India; Haim Alca-

lay, '61, Israel; Christopher Lange, '61, Poland; Robert Wong, '62, China; and Juan Calvodedios, '63, Cuba.

There has been unusually keen interest this year in judo, as a result of the meetings of the Hui-O-Judo Club thrice weekly in the Du Pont gymnasium. The 40 white-coated members of the club are learning a form known as Kodokan Judo, developed about 1882 in Japan. Training begins with learning to fall and progresses through extremely exciting and unexpected throws such as the one shown above.



Sloan Fellows

The annual field visit to Washington for the 1961 Sloan Fellows was held April 3-7. Meetings were held with Secretary Dillon, Secretary Goldberg, Secretary Ribicoff, Attorney General Kennedy, and other distinguished members of the new administration. . . . Plans are also well under way for the second visit by the Sloan Fellows with industrial and political leaders of Western Europe.

There have been a number of changes of assignments among the Sloan Alumni. **Philip G. Eckert '53**, is now chief engineer, Illinois Bell Telephone Company. . . . **Phillip J. Gow '55**, has been promoted to division superintendent—Engineering and Maintenance of American Steel and Wire's Central Furnaces and Docks. . . . **Hugh E. Witt '57**, has been assigned assistant deputy, Office of the Assistant Secretary of the Air Force. . . . **Charles W. King '59**, is the new executive engineer, Delco-Remy Division, General Motors Corporation. . . . **Donald C. Beaumariage '60**, has moved to Washington as manager, Elco Program, Communications and Aerospace, Defense Electronics Products of Radio Corporation of America. . . . **Hassan Soliman Mohamed '60**, has become the plant manager, "IDEAL" Works, Societe de Metallurgie Egyptienne. . . . **George F. Schuning, Jr. '60**, transferred to New York as administrative assistant, J. O. Ross Engineering Division, Midland-Ross.



J. D. Rittenhouse '40 (left), President, Northern California Club, and H. R. Greatwood '24, at United Air Lines central maintenance base.

His classmates among the Sloan Fellows, and all of us, have been saddened by the news that **William W. Heilman '51**, Manager of the Niagara plant of Union Carbide Metals Company, died unexpectedly on February 14. He had received his bachelor of science degree in metallurgical engineering from Carnegie Institute of Technology in 1941 and immediately joined Union Carbide Metals, moving up the ladder to his position as plant manager in 1960.—**John M. Wynne**, Room 52-455, M.I.T., Cambridge.

Deaths

MILTON M. WHEELER '94, Feb. 3*
DORVILLE LIBBY, JR. '95, Dec. 14*
SAMUEL A. NEIDICH '98, Feb. 12*
ANGUS A. MACINNES '01, Feb. 15*
DAVID SUTTON '04, Feb. 20*
FRANK W. BROWNELL '05, no date given*
ELIZABETH GREENMAN '06, Jan. 18*
JESSE R. CLARK '07, Nov. 19*
BENJAMIN BULLARD '08, Feb. 2*
JAMES MCGOWAN, '08, March 15
RUDOLPH B. WEILER '08, Feb. 16*
XANTHUS R. SMITH '09, March 8
FREDERICK A. GODLEY '10, Feb. 21
E. EARLE ROOT '10, Jan. 22
THEODORE F. W. MEYER '11, Feb. 20*
WISTAR W. JOHNSON '13, Feb. 5*
WARREN C. NEWBURY '14, Sept. 1960*
FRED L. COOK '15, Aug. 6*
FRANK W. HALL '15, Oct. 28*
ROYAL R. HINCKLEY '15, Aug. 6*
HARRY H. LAW '15, July 31*
LUTHER S. PHILLIPS '17, Dec. 24
CHARLES B. MEYER '20, Oct. 30*
ADOLPH J. FREIHEIT '22, Oct. 15
FRANK F. HOBSON '23, Feb. 7*
ROBERT RICHARDSON '23, Dec. 15*
HELEN HARDY BLACKWELL '24, Jan. 26*
LEON T. COLMAN '24, Jan. 25*
LAWRENCE A. FOSTER '27, Jan. 9*
JOSEPH S. BRADLEY '28, Jan. 17
JOHN R. FARMER '33, Feb. 25*
JOSEPH KAYE '34, March 20
BROOKS S. MORGAN '35, Jan. 17
JESS H. VEAL '35, Dec. 30
FREDERICK W. LOOK '41, no date given
JOHN CURTIS ADAMS, JR. '48, August 1*
LOUIS F. BLANC '48, Jan. 19
GEORGE H. MARINGAS '48, Feb. 16
DEWEY R. INGRAHAM '50, March 12
ELMAN R. SHOWERS '50, no date given
WILLIAM W. HEILMAN '51, Feb. 14
CHARLES J. BENNETT '54, Feb. 3
 *Further information in Class Notes

Class Reunions in 1961

- 1901 June 10-11. Endicott House, Dedham. Theodore H. Taft, Secretary, 34 Lawrence Street, Jaffrey, N.H.
- 1906 June. Plans in progress.
Edward B. Rowe, Secretary, 11 Cushing Road, Wellesley Hills 81.
- 1911 June 9-11. 50th reunion: Snow Inn, Harwich Port, Mass. Oberlin S. Clark, Reunion Chairman, 50 Leonard Road, North Weymouth.
- 1913 June 9-11. Hotel-Motel 128, Dedham, Mass. G. Philip Capen, Secretary, 60 Everett Street, Canton.
- 1915 June 12. Faculty Club. Cocktail Party at 4:00 for classmates and guests.
- 1916 June 9-11. Oyster Harbors Club, Osterville. Thomas D'A. Brophy, Reunion Chairman, 470 Park Ave., New York, N.Y.
- 1921 June 9-11. Mayflower Hotel, Manomet Point, Plymouth, Mass. Melvin R. Jenney, Reunion Chairman, Kenway, Jenney and Hildreth, 24 School Street, Boston 8.
- 1926 June 9-11. The Belmont, West Harwich,

- Mass. Robert T. Dawes, Reunion Chairman, Thomas Taylor & Sons, Hudson.
- 1931 June 9-11. Wianno Club, Osterville, Mass. Harold D. Gurney, Reunion Chairman, 50 Victoria Road, Quincy 69.
- 1936 June 9-11. 25th reunion: Baker House, M.I.T. Reunion Co-Chairmen: Vincent T. Estabrook, 25 Varick Road, Waban 68; Harold F. Miller, 50 Corell Road, Scarsdale, N.Y.
- 1941 June 9-11. Bald Peak Colony Club, Melvin Village, N.H. Reunion Co-Chairmen: Johan M. Andersen, Saddle Hill Road, Hopkinton; John F. Sexton, 14 Rangeley Road, Winchester.
- 1946 June 9-11. Snow Inn, Harwich Port, Mass. James S. Craig, Reunion Chairman, 4 The Valley Road, Concord.
- 1951 June 9-11. Chatham Bars Inn, Chatham, Mass. Charles H. Spaulding, Reunion Chairman, 9 Belfry Terrace, Lexington.
- 1956 June 9-11. Woodbound Inn, Jaffrey, N.H. Robert L. Malster, Reunion Chairman, 49 Elsinore Street, Concord.

Class Notes

'91

As the celebration of the 100th Anniversary of the founding of Tech is here, we think of those precious companionships and associations which have sustained us all these years. Our class has a man of unusual charm and distinction who ties us up with the best in those early days. That man is **Ambrose Walker**, son of Technology's third president. Here are some statements of what we as a class think of Ambrose. . . . **Linfield Damon** writes: "When at Winter Park, Fla., several years ago I used to see him almost daily, and became very fond of him. He has a delightful personality and resembles his father in his quiet and gentle manner." . . . **Harry Cole** of North Pembroke, Mass., says: "We had no common interests at Tech, so I know him only as a class member and a very agreeable acquaintance at class reunions. Wish I knew him better." . . . **Ernest Tappan** writes: "I knew him quite well at the Institute. His father was president while we were there and he was intimate with my cousin, Lewis Hooper Tappan, '96. Ambrose took the course in architecture and later built a house in Florida where he spent most of his time. He is a fine fellow and has come to look exactly like his father." . . . And **Ed Earl**: "While we were in M.I.T. I saw very little of Ambrose, as we were about at opposite ends of the alphabet, and in very different courses. But at Alumni meetings of '91 I did get to know him quite well. Like his father, our President, he was a good listener, not talkative unless he had something to say, and then one knew that he knew what he was talking about. Ambrose is a very companionable person once you really get to know him." . . . Ambrose is quite feeble now, as I suppose most of us are, but I am sure he will appreciate knowing how some of us think of him. We send him our affectionate regards, and very best wishes. His address is 370 Commonwealth Avenue, Boston 15, Mass.—**William Channing Brown**, Secretary, 36 Foster Street, Littleton, Mass.

'92

Recently the secretary received the following account of the career of Dr. **Arthur M. Worthington** who died at his home in Dedham in November, 1959: "A lifelong resident, Dr. Worthington was graduated from Boston English High School in 1888 and Massachusetts Institute of Technology in 1892. He earned an M.D. degree from Harvard Medical School, cum laude, in 1896. He

was assistant bacteriologist at Harvard Medical School from 1905 to 1912, and bacteriologist for the Dedham Health Department from 1911 to 1940. He was with the A.E.F. in France and Germany in 1918-19 in the Medical Corps. Dr. Worthington was a member of the American Medical Association, Massachusetts Medical Society, American Legion, and a Mason. He was president of the Dedham Historical Society from 1940 to 1956. In 1936 he was chairman of the Dedham tercentenary committee. He was a vestryman of St. Paul Church from 1909 to 1938, and was also author of the official history of the church. Dr. Worthington leaves a son, Arthur M., Jr., of Methuen; a daughter, Alice, wife of Dr. Stanley Kimball of Dedham; two brothers, John W., of Boston, and Alvan F. here; and seven grandchildren."—**Charles E. Fuller**, Secretary, P. O. Box 144, Wellesley, Mass.

'94

The secretary regrets to report the death of another of our original members, **Milton M. Wheeler**, who died at Sarasota, Fla., on February 3, 1961. Wheeler came from Kentucky, and was a student in the Department of Civil Engineering, but left after two years, and returned to Kentucky. Information as to his professional activities is extremely limited, but for many years he was located at Central City, Ky. Subsequent to 1948 he retired to Sarasota, Fla., where he lived in retirement. An attempt will be made to secure information from his widow, which perhaps can be recorded later.

The secretary, at the time of writing these notes, is about to fly to Los Angeles for a few days with friends, and then to San Francisco to attend the annual meeting of the Refrigeration Research Foundation, of which he was elected honorary chairman of the Board of Governors at the 1960 meeting. He will have the pleasure of introducing Prof. Cecil G. Dunn, '30, of the Department of Food Technology, who has been elected a member of the Scientific Advisory Council, assuming the place made vacant by the death of Prof. B. E. Proctor, '23, also of the same department. The secretary also hopes to have a day with **Jack Nowell** at his lovely home at Hillsborough.—**Samuel C. Prescott**, Secretary, Room 16-317, M.I.T., Cambridge, Mass.

'95

According to our '95 Constitution we should hold our Annual meeting next month in June at the time of the M.I.T. Alumni Day. We can do so before, during, or after the Alumni luncheon usually enjoyed under the tents on the Great Court. If you expect to attend in person, drop us a line so that we can make the reservation. If you do not expect to come, send us a line just the same and include the latest news about yourself and any suggestions for class actions.

We miss hearing from our old friend in California, **Dorville Libby, Jr.**, who left us behind last December 14. Dorville was born June 24, 1872 at San Francisco, Calif., and came to M.I.T. with the over 400 who formed the Freshman Class of '95. Before entering M.I.T. he attended the University of California, 1890-91. He remained at M.I.T. for the full four-year Course VI, Electrical Engineering, returning each year from San Francisco, and he graduated in June of 1895 as one of our class of 225.

On leaving M.I.T. with his S.B. he returned to San Francisco, turned down an opportunity to take a chair of physics in a local technical college at \$1,200 per annum, and went to work for the Union Iron Works at 10 cents per hour. Six months later he worked as chief engineer for the Pelton Water Wheel Company, then as chief engineer of Byron Jackson Pump Works. On April 21, 1896, he was married to Josephine Mansfield. Their son, John Mansfield Libby, was born April 22, 1899, and their daughter, Constance Mansfield Libby, was born September 14, 1907.

In 1899 with **Edgar A. Boeseke**, Course II, he established the Sunset Automobile Company in San Francisco, thus becoming almost a pioneer auto manufacturer. He said: "One thing we didn't learn at Tech was the science of promotion." The struggle was hard, but in 1905 a new factory was built and prosperity seemed near when all was ended in the San Francisco disaster of April 18, 1906. The city's ashes were still hot when Harry Knox of Springfield, Mass., engaged him as chief engineer of the Knox Motor Car Company, later the Atlas Motor Car Company. After two years he was employed on design work by Chalmers Motor Car Company. Returning to San Francisco, he entered municipal employment in the design and construction of street railways. A serious and protracted illness terminated his employment by the city and also rendered impossible any participation in war activities. By the time he was physically fit,

Happy Birthday

This month we extend congratulations to two Alumni who will celebrate 85th birthdays and to 12 who will become 80. They are listed below with dates of birth.

May, 1876—**HENRY M. BROCK** '00, on the 8th and **JOHN L. DAKIN** '00, on the 31st.

May, 1881—**GILMAN B. JOSLIN** '05, and **OLIVER P. SCUDDER** '03, on the 3rd; **EDWIN G. KINTNER** '08, on the 5th; **FRANK E. MOTT** '08, on the 9th; **FREDRIC MENNER** '07, on the 11th; **WILLIAM R. GREELEY** '02, on the 12th; **HERBERT W. OLMSTED** '05, on the 15th; **JASPER E. CRANE** '04, on the 17th; **GEORGE R. WALWORTH** '04, on the 22nd; **AUSTIN Y. HOY** '04, on the 26th; **HARRY WIGGIN** '05, on the 27th; and **REBECCA DODD** '06, on the 31st.

With the addition of these names, the honor roll of the Alumni Association now contains one centenarian, 92 nonagenarians, and 772 octogenarians.

the war had but a few months to run. The family was actively represented by his soon who volunteered at the age of 18 and stayed with it until the Army of Occupation was withdrawn. Dorville returned as engineer of the Pelton Water Wheel Company until his retirement in 1936.

He and his wife Josephine resided at 10 San Pablo Avenue, San Francisco, where she died in 1944. Dorville continued there until 1953 when he went to live at his daughter's residence in Berkeley until he moved to an apartment in Oakland, Calif., in 1955. He remained there until 1960 when he went again to be with his daughter, then in Richmond, Calif., for a few months until he found nice quarters in a rest home at Hayward. Late in June his doctor sent him to a hospital for various tests and checkups. From that time on he was an invalid, unable to walk, but mentally pretty sound, and propelled himself quite well in a wheel chair. After a week in the hospital they took him to a nursing home in Oakland where he was made as comfortable as one could be in his condition until he died on December 14, 1960. Right after lunch he had a slight heart attack, and died in a matter of minutes, apparently feeling no pain. He was 88 years old. He is survived by his two children; his son, John, and daughter, Constance Libby Smith; two grandchildren, Patricia Joan Libby, of Washington, D.C., and Ralph Dorville Libby, of San Jose, Calif.; and four great-grandchildren, all children of Ralph.—**Andrew D. Fuller**, Assistant Secretary, 120 Tremont Street, Boston, Mass.; **Luther K. Yoder**, Secretary, 69 Pleasant Street, Ayer, Mass.

'96

Harold S. Boardman still lives at 39 Winter Street, Waterville, Maine, when he is not at his summer home on Hancock Point or opposite Bar Harbor, where the Jackson Memorial Laboratory is located. He is a trustee of the laboratory that does cancer research on a two million dollar yearly budget. The annual meeting of the laboratory to which he goes is held in New York. That trip and the eight thousand miles he drives now suffices. As president of the University of Maine, he travelled all over the country. He writes: "I attend the Rotary, as an Honorary Member. . . . Still drive my car, watch TV, read, write, smoke and work in my wood-working shop . . . my wife has her woman's club. We are both blessed with good health. Four months are spent out of doors doing the various chores a summer place entails and performing duties incumbent on me as head of the local summer water company."

Jack Eynon congratulates himself on having selected San Diego as a place to retire, especially this winter when he read of what the rest of the country was experiencing. He lives alone in a five-room house at 2434 Dulzura Avenue and continues to drive his car on limited short trips. He is beginning to feel that he is a patriarch but most of the 55 members of

the class have the same status so Jack has no monopoly. . . . It was a pleasant surprise to find the name **George Merryweather '34**, as president of the American Machine Tool Distributors Association so the secretary congratulated him in the name of the class of which his father was a loyal member. Is the class as a unit becoming patriarchal? . . . **Albert Victor Shaw's** niece, in a letter sent to R. M. Copsey '44, soon after her uncle's death on November 20, 1959, writes of his life just as he himself did in the November, 1957 issue of *The Review*, concluding: "He lived his life as he wanted to, to the hilt, following the call of the Red Gods as in Kipling's 'The Feet of Young Men,' which poem was his inspiration: 'He must go-go-go away from here/On the other side the world he's overdue/Send the road is clear before you when/Old Spring-fret comes o'er you,/And the Red Gods call for you!'" . . . The list of living members of the class with addresses has been mailed to the 52 on the list.—**James M. Driscoll**, Secretary, 129 Walnut Street, Brookline, Mass.; **Henry R. Hedge**, Assistant Secretary, 105 Rockwood Street, Brookline.

'97

The following quotation is from a letter received from Mrs. Margaret A. Marsh, a neighbor of Mrs. **Augustus Lamb**. It refers to the flowers sent by your treasurer on behalf of the class in memory of Gus. "I wanted to write to tell you how much Mrs. Lamb appreciated the flowers and how beautiful they were. Roses and white carnations made the loveliest bouquet. I am not sure Mrs. Lamb would be able to thank you and the Class of '97, though I know she would like to have you know how grateful she is. Unfortunately she and Mr. Lamb had no children, but there are three sons by Mr. Lamb's first marriage. They are all grown and themselves married. One of the sons came and helped with the funeral arrangements. Mrs. Lamb has been stunned by the suddenness of Mr. Lamb's going."

A clipping from the *Springfield, Mass., News*, says that Mr. Lamb "was employed for 58 years by the American Writing Paper Company and for many years was the sales manager of the Holyoke office. Mr. Lamb retired in 1958. He was a past commander of the Springfield Commandery. His first wife, Effie B. Armstrong, died in 1918. On December 15, 1922, he was married to Effie D. Zeller in Hartford. Besides his wife, he leaves three sons: Roland A., of Peabody; Donald A., of Flushing, N. Y.; and Beverly B., of St. James, Md."—**John P. Ilsley**, Treasurer, 26 Columbine Road, Milton 87, Mass.

'98

Continuing the narration about classmates who have recently passed on, we have received through the kindness of

Mrs. Milliken, a clipping from the *New Bedford, Mass., newspaper*, edition of November 12, 1960, concerning her husband, **Edward N. Milliken**.

The article is headed by an excellent picture of our classmate and says: "Edward N. Milliken, 85, of 62 Forest Street, a former teacher and chemist, died yesterday at St. Luke's Hospital after a long illness. He was the husband of Mrs. Helena (Cory) Milliken. Mr. Milliken was a direct descendant of Peter Folger of Nantucket, who was the grandfather of Benjamin Franklin. He was a graduate of Columbia University, where he received a master's degree in science, and he also attended Massachusetts Institute of Technology. He had taught science at Friends Academy and was principal for a number of years at Padanaram High School. Mr. Milliken was registrar of voters in Padanaram for nearly 29 years, resigning in 1948. He attended North Congregational Church for more than 60 years and was a deacon of the church. He was also a member of Old Dartmouth Historical Society, Christian Men's Club and the M.I.T. Club. He had been employed as a chemist by the New Bedford Gas and Edison Light Company and J. C. Rhodes and Company." We also quote, in part, from Mrs. Milliken's letter, as follows: "The clipping is, of course, very sketchy and in my hurry I probably neglected to write a good deal of importance, and, too, some things were omitted. They neglected to say that his first wife was Mary C. Chase, who died in 1957, and that he was quite a realtor, having bought a large tract of land in South Dartmouth, Mass.; and on this land 18 houses have since been built." We were very happy to meet Mrs. Helena (Cory) Milliken when, with Ed, she attended the 60th Reunion of the Class of '98, and thank her for sending us information concerning the life of her husband and our esteemed classmate.

Through the courtesy of the Alumni Association, we have the following clipping concerning **Sammy Neidich**, from the *New York Times* of February 13, 1961: "Samuel A. Neidich, retired head of the Neidich Process Company in Philadelphia, manufacturers of typewriter ribbons, died yesterday at the home of a daughter after a brief illness. He was 85 years old. Mr. Neidich was a graduate of Dickinson College, class of '95, and Massachusetts Institute of Technology, class of '98. The ribbon invented by Mr. Neidich was made from yarn made up of artificial silk filaments that have irregular surfaces for holding the ink with which the ribbon is impregnated. Surviving are two sons, George and Louis; two daughters, Mary Neidich and Mrs. S. H. Linderman; eight grandchildren and eight great-grandchildren."

We always thought that **William Brewster** was the youngest in our class. Now writes our agile president, **Daniel W. Edgerly**, and calls our attention to the item in the February *Technology Review*, page 50, where under the caption, *Candle Count*, February, 1876, we find "**Leroy H. Byam**, '98, birthday, February 29th." Now February 29, 1876 was a leap year, so that Leroy has had since

then only 20 birthdays. And thus, at 20, he is by far the youngest of the class of '98. Who else in the class was born on the extra day of a leap year? Let us know for the record and for the sake of accuracy. We must be accurate, you know. . . . You should all have received recently a Roster of the Class of '98, addresses as of April 1, 1961. The *raison d'être* is as follows: the last roster was compiled by our classmate, **Lester D. Gardner**, as of January 1, 1957. At that time, there were 105 on the Roster. The present total is 60 (or 63 if you include three from whom letters have been returned). Look this roster over to be sure: (1) That your own address is correct, and (2) To see if you can find any correction of address to forward to us. Thanks manyfold!—**Edward S. Chapin**, Secretary, Hotel Beaconsfield, 1731 Beacon St., Brookline 46, Mass.; **Frederic A. Jones**, Assistant Secretary, 286 Chestnut Hill Ave., Brighton 35, Mass.

'01



These are the last class notes that you will receive before the reunion which occurs on June 10 and 11. You will have received the questionnaire from **Willard Dow** and I hope have answered it. If not please do so at once.

I have to report the death of **Angus A. MacInnes**, I, on February 15, 1961 after a long illness. He was 84. After graduation he worked until 1936 as civil engineer and chief purchasing agent for **Patrick McGovern, Inc.**, in New York on heavy construction work. On the death of Mr. McGovern he was chief purchasing agent for the **Walsh Construction Company** in New York and the **Walsh-Kaiser Company**, Providence. He was involved with the **Walsh Company** in the construction of **Camp Edwards** on **Cape Cod** and with the **Walsh-Kaiser Company** in the construction of cargo vessels. He retired in 1947. He leaves two sons, six grandchildren and one great grandson.

I have just received a letter with a newspaper clipping from **Jack Scully's** son **George** in **Las Vegas, Nev.** Jack was so popular in the class that I am going to give a somewhat lengthy account taken from the son's letter and the clipping. Perhaps the most interesting thing in Jack's history is the fact that for 60 years he was a close friend of **John F. "Honey Fitz" Fitzgerald**, President **Kennedy's** maternal grandfather and knew the Chief Executive's mother from the time she was a young girl. Among his treasured souvenirs is a photo of his friend, Mayor **Fitzgerald**, and his family, showing the President's mother as a beautiful young woman. "She still is a most attractive woman with abounding energy." He got a great kick out of the TV inauguration. Shortly after he left the Institute he established the **John T. Scully Foundation Company**. The business was very successful. One of the projects was the building of the **Commonwealth Pier** in **Boston harbor**. In 1929 he entered public service through the sug-

gestion of "**Honey Fitz**" and later was appointed director of the **Civil Works Agency** for the state. He had a stroke about 16 or 17 years ago and has been with his son **George**, who is general manager of the **Paradise-Strip Investment Company** in **Las Vegas**, for most of his later life. **George** says: "For the past two years he has been practically bedridden but has the will to keep punching like all the good old Beaneaters. May I suggest that next year you arrange the class reunion in **Las Vegas**? That is one reunion that Dad could attend. Dad, of course, would appreciate receiving news from his classmates. Even though he is unable to correspond, I would do it for him." . . . It is surely up to Jack's old friends to write him or send him a card. His address is 26 East Basic Road, **Henderson, Nev.** Will see you next month in **Dedham**.—**Theodore H. Taft**, Secretary, Box 24, **Jaffrey, N. H.**

'04

We have only two items of news this month, one good and the other bad. . . . Item 1: A card from **Frank Davis** says that he and Mrs. **Davis** had a pleasant trip to **Hawaii** by boat and were enjoying their stay there. About the time these notes are written they are due back home and I suppose **Frank** will be taking off for spring fishing at his **Michigan** camp.

Item 2: **Dave Sutton** has joined the majority of our class in the great beyond. A note from his daughter, Mrs. **A. H. Stafford** of **Waban, Mass.**, reads as follows: "My father, **David Sutton**, always enjoyed reading the **Technology Review** and hearing of his classmates of '04. I wish to advise you, as secretary, that he passed on at his home **February 20** following very shortly after mother, **Elizabeth M.**, who died very suddenly **January 28**. They had celebrated their 54th wedding anniversary in **November** and enjoyed a very happy life close to their children and grandchildren. We are very grateful that they were not apart for long." **Davie** graduated from **Earlham College, Richmond, Ind.**, before coming to **M.I.T.** He was for many years associated with **Fay, Spofford and Thorndike**. (**Spofford** was an assistant when we took surveying and later head of the **Civil Engineering Department**.) Later he joined the firm of **Cleverdon, Varney and Pike** and was consulting engineer of this organization at the time of his retirement four years ago. In addition to his daughter mentioned above, he leaves a son, **David, Jr.**, of **Lancaster, Mass.** **Dave** attended many of our reunions and will be missed by numerous friends.—**Carle R. Hayward**, Secretary, Room 35-304, **M.I.T.**, **Cambridge**; **Eugene H. Russell, Jr.**, Treasurer, 82 **Devonshire St.**, **Boston**.

'05

By the time you read the notes the 100th Anniversary will be history. Hope you were able to enjoy it. A report as to

1905 activities and men (and women) present will be found in the **June** issue. Next is **Alumni Day**, details of which you will be receiving direct from the **Alumni** office. It will be an opportunity for our 56th reunion. Unless I hear a considerable demand for a separate reunion (**Cape Cod, Boston Hotel, etc.**) we will expect to fill a table again at the **Alumni Luncheon**, similarly at the banquet in the evening.

I am in receipt of a clipping from the **January 21** issue of the **Bangor, Maine, News**, telling of a testimonial party at **Hotel Caribou, Caribou, Maine**, for **Patrick J. Sullivan**, who was retiring after 38 years as general manager of the **Aroostook Federation of Farmers**. He came to **M.I.T.** from **Lawrence, Mass.**, entered **Course V** and is recorded in the 1903, 1904 and 1906 **Techniques**. On leaving **M.I.T.** he is reported to have built and operated at **Jersey City** the first factory for the commercial manufacture of **ammonium nitrate** in the **United States** and was considered the dean of **New England's** fertilizer industry. . . . Just heard from **Sam Seaver, XIII**. He says, "I'm in pretty good condition for the shape I'm in. Went into the hospital on **February 3** for ten days for a check-up. They x-rayed me (15 plates) from the top of my bald head to my big toe, pronounced me 100 per cent, but did say that the upper part of my spine is solidified (osteoarthritis), but I danced a jig. I went to **Cape Cod** last September, down to **Provincetown**, where I spent some of my vacations when a kid. Remember me to **Gilbert** and any other '05 men who may remember me. . . . Just learned of the death of **Frank W. Brownell, VI**. More details in the **June** issue.—**Fred W. Goldthwait**, Secretary, Box 32, **Center Sandwich, N. H.**; **Gilbert S. Tower**, Assistant Secretary, 35 **North Main Street, Cohasset, Mass.**

'06



By now all those who plan to attend our 55 year reunion should have received or should soon receive the final letter covering the program in detail, and the final confirming reservation should be returned promptly. The first letter was picked up from the printer the morning of **March 14** and with the help of **Marion** all 200 or more were delivered to the **Post Office** in the afternoon of the 15th. Replies began coming in almost immediately.

Back in **February** a group from **Wellesley** attended a **Boston** luncheon and report meeting on the **White House Conference** on the **Aging**. Among them was **George Guernsey, I**, who said he felt they didn't learn much about those particular problems. Probably by **May** the formal report on that conference will have received some helpful publicity. . . . Another report got some publicity in the **March** **Class Notes** where **Burton Philbrick**, Secretary of '02, gave **Percy Tillson, VI**, a pat on the back for sending him a newspaper clipping reporting the death of a prominent **Harrisburg** resident.

Incidentally, Percy is also one of my best correspondents.

Back in 1957 while in Connecticut visiting my son and his family, I read in the house organ of Electric Boat an article based on the "Mystic Seaport Guide" of the Marine Historical Association, Inc. As it contained much of interest about the Greenman Brothers Shipyard, site of the Mystic Maritime Museum, I copied part of the article and intended on some later visit to telephone to, and perhaps call on, Miss **Elizabeth Greenman** who has always been listed with our class, although she was with us only sophomore year as a graduate student. Alas, that telephone call was never made and it was painfully recalled when in February at a meeting of the Wellesley Historical Society I chatted with the guest speaker, Edouard A. Stackpole, who is Curator of Mystic Seaport and learned that Miss Greenman had died just a few weeks before. She was born in Mystic April 22, 1870, and died at her home there on January 18 in her 91st year. She had been baptized as a young girl in the "Aloha" meeting house which had been built in 1851 by her father and his brothers, and in 1955 moved to its present location in the Seaport. Miss Greenman was evidently among the "top ten" in school, for she attended Wellesley College, graduated in 1892, and for the next 45 years taught school in the Boston area, at Boston Latin and various elementary schools, retiring to her old home in Mystic in 1938. While teaching she did postgraduate work at the University of Chicago, and at M.I.T. in 1896 and '97 and in 1903 and '04, in both Course V and Course VIII, I believe. In her younger years Miss Greenman had been active in the League of Women Voters. A long and truly useful, helpful, life! . . . In June notes I should be able to tell you who expects to attend the reunion, with some news perhaps from those who will not.—**Edward B. Rowe**, Secretary-Treasurer, 11 Cushing Road, Wellesley Hills 81, Mass.

'07

I wrote **Phelps Swett** at the time of **Gene Potter's** death and had a fine letter in reply. I quote one paragraph: "Gene was my closet friend during my four years at Tech, both of us being in the same course and always sitting together unless we were seated alphabetically. He was one of Professor Swain's casualties at the end of his senior year and had to return to Tech in the fall of '07 to satisfy a few credits for graduation. Previous to most of our annual class reunions I got in touch with him to see if he would go to the '07 reunion, and often he would plan on it and finally write that he could not make it."

The Alumni Office notified me of the death of **Jesse R. Clark**, Course II, on November 19, 1960. I find noted on his record card that he was a non-associate and for many years was sales manager for the Revere Sugar Refining Company, with an office in Boston. His home ad-

dress was 28 River Road, Annisquam, Mass. . . . I have recently received a note from Mrs. **John H. Link** saying she would like to give a Senior Portfolio and an '07 Technique that John owned to some member of the class. If any of the '07 men would like one, or both, of these books, please write me. First come, first served. . . . Did you notice "M.I.T.—The Greatest School of its Kind" on the cover of *Fortune* for February? The article is worth reading.—**Phil Walker**, Secretary and Treasurer, 18 Summit Street, Whitinsville, Mass; **Gardner S. Gould**, Assistant Secretary, 409 Highland Street, Newtonville 60, Mass.

'08

Our third dinner meeting of the 1960-61 season was held at the M.I.T. Faculty Club on Wednesday, March 8. In spite of the raw and threatening weather the following faithful showed up: **Bunny Ames**, **Bill Booth**, **Nick Carter**, **Myron Davis**, **Leslie Ellis**, **Sam Hatch** and **Paul Norton**. Our guests were **Mesdames Ames**, **Davis**, **Ellis**, **Hatch** and **Norton**. There was the usual Wednesday evening crowd in the Cocktail Lounge, but we managed to capture our regular two tables so we could all sit together while enjoying our favorite appetizers.

Joe Wattles wrote from Florida that he and **Eudora** were enjoying themselves. They had 70 to 80 degree weather with tomatoes and strawberries ready to pick in their garden. . . . The **Sewells** couldn't come, as **May** had just returned from a visit to the Deaconess Hospital. . . . The **Freethys** were at West Dennis on the Cape; Town Meeting doings, I imagine.

After cocktails we adjourned to the private dining room for the fine dinner provided by our host, Mr. Morrison. As it had begun to snow we started home fairly early. Our fourth and final dinner meeting will come on Wednesday, May 10 at the M.I.T. Faculty Club. Try to join us.

Ray and **Blanche Drake** celebrated their 50th Anniversary in March. The congratulations of '08 to them both. . . . We are sorry to report the death of **Ben Bullard** at his home in Garden City, Kansas, on February 2. . . . We also must report that of **Gus Weiler** at his home in West Chester, Pa., on February 16.—**H. Leston Carter**, Secretary, 14 Roslyn Road, Waban 68, Mass.; **Leslie B. Ellis**, Treasurer and Assistant Secretary, 230 Melrose Street, Melrose 76, Mass.

'09

In the March Review we reported that **Helen Longyear Paul** left a \$1,000 insurance policy payable to the 1909 Scholarship Fund. This was the amount stated by the executor **H. L. Tibbetts**. The actual amount which has been received is \$1,446.78.

The following letter from **Salvador E. Altamirano**, VI, dated January 3, 1961,

was sent from New York to the Institute: "I went to Boston this weekend after 50 years and found every office in M.I.T. closed and to my regret I found no traces of the old building in Boylston Street where I studied. Thanking you in advance would be greatly obliged to you for sending me a list of my class of 1909 as I desire to know the names of those still living and their addresses." **Fred G. Lehmann**, '51, Assistant Secretary of the Alumni Association, answered it as follows: "I imagine you were surprised on coming to Boston last week to find that none of the M.I.T. buildings are left in the old Boston location. While there you might have noticed the building which now houses the Bonwit Teller store. I suppose you know that this building was formerly the Museum of Natural History. The Rogers Building was, of course, adjacent to it. The buildings of the New England Mutual Life Insurance Company now occupy the land that was formerly occupied by M.I.T. Although we cannot readily give a list of all the present living members of the Class of 1909, I am taking the liberty of sending a copy of this note to Mr. **Chester L. Dawes** who is your class secretary. I am also sending your original letter to him. Perhaps the two of you will be in correspondence." We in Course VI knew **Alty**, as we called him, very well and were very fond of him. He often invited some of us to dances given by a Latin American club and it was a real pleasure to meet the pretty *senoritas*. He came from Mexico City and performed his thesis with the late **Delos Haynes** on electric street cars. In later years we have written **Alty** asking for information about himself for class notes but have never had a reply. Our records show that he was in Uruguay in 1937. **Delos** saw him in 1938 and stated that he was in the diplomatic service in South American countries and could be reached through the Department of State, Mexico City. In 1943 **Delos** advised us that **Alty's** address was Buenos Aires. We have written to **Alty** again asking for information about himself and sent him a photostat of one of the Fiftieth Anniversary lists of names with addresses. We also told him that he reminded us of **Rip Van Winkle** except that **Rip's** time was only 20 years, not 50. We certainly hope to hear from him.

In the April Review we reported the death of **Daniel Belcher**, II. Mrs. **Belcher** has sent us another clipping relative to her husband which gave essentially the same information which was stated in the class notes. She added: "Thank you very much for your letter and your kind expression of sympathy." . . . **Edward L. Ryerson**, I, the now-retired chairman of the Inland Steel Company, presented a paper, "Russian Management and Technology", at the meeting of the Chicago Section of the Institute of Radio Engineers held in Chicago last February. The paper is based on some of his observations of Russia where he went in 1958 as head of a 19-man delegation of American steel and iron-ore mining specialists. **Edward** has been awarded a number of citations for his devotion to the causes of humanity, and in May, 1951, the Amer-

ican Iron & Steel Institute presented him with its Gary Memorial Medal. He holds honorary degrees from Yale University (M.A., 1932), Kenyon College (L.L.D., 1947), Ripon College (D.C.L., 1948), Williams College (L.L.D., 1952), and the University of Chicago (L.L.D., 1956). On graduating from the Institute he entered the steel business with Joseph T. Ryerson & Son, Inc., which was established in 1842 by his grandfather. He was chairman of both Inland and Ryerson after they merged in 1935 until his retirement in 1953.—**Chester L. Dawes**, Secretary, Pierce Hall, Harvard University, Cambridge 38, Mass.; Assistant Secretaries: **George E. Wallis**, Wenham, Mass.; **Francis M. Loud**, 351 Commercial Street, Weymouth 88, Mass.

'11



As of early March Reunion Chairman **Obie Clark** had received answers from an additional 18 classmates regarding their chances of being at Snow Inn in June. Cleon Johnson and "mate," Morell Mackenzie and "mate," Arthur Rooney, and Ralph Runels reported chances excellent. Howard Ireland, Charles McManus, Guy True and Henry Wood reported chances fair. Ten others said poor. . . . **Harold Babbitt** wrote: "For 50 years I've planned to come. Now I'm going to be stuck in Korea in June '61 and can't make it. I'll plan to attend our centenary." . . . **Harold Smith** says he expects to be on his way to England by cargo ship at the time of the reunion. . . . **Roger Spencer** wrote: "Unable to attend. Sorry. Must attend grand-daughter's wedding on June 10 in Connecticut. Best of luck to all." Combined with those reported in the April Review, answers had been received, as of early March, from a total of 102 classmates, 35 with chances excellent, 21 fair, and 46 poor. Of the 35 "excellents," 26 indicated "party of two," which adds up to 61 "excellencies." Here's hoping that all the "fairs" and many "poors" will change to excellent, and that additional classmates will register.

Theodore F. W. Meyer, II, died February 20 at his home in Birmingham, Mich. The following quotations are from a newspaper clipping sent to me by **Minot Dennett, II**, of Detroit: "Services for Theodore F. W. Meyer, 70, a leading designer of marine propellers, will be held at Christ Church, Cranbrook. Mr. Meyer died at his home after a short illness. He had been a resident of Birmingham since 1930. He was formerly employed by the Scripps Motor Company and the Federal Mogul Marine Division. He then served as an independent marine engineer and consultant. He is survived by his wife Mary; two sons, Eric, of Delray Beach, Fla., and Weston, of Birmingham; three sisters, Anna, Helen and Florence, all of Yonkers, N. Y.; a brother, Ernst, of Glen Falls, N. Y., and one grandson." Our sympathy and best wishes to his family.

The following address changes and corrections have been received: **Luis de**

Florez, II, 200 Sylvan Ave., Route 9-W, Englewood Cliffs, N. J. It was previously shown as Route 9, West Englewood Cliffs. . . . **Charles R. Strong, IV**, 3236 Columbia Parkway, Cincinnati 26, Ohio. . . . News rather scarce for this issue. Please be sure to keep me informed promptly whenever anything happens.—**Henry F. Dolliver**, Secretary, 10 Bellevue Road, Belmont 78, Mass.; **John A. Herlihy**, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

'12

A letter just received from Mrs. **Robert H. Woods, Jr.**, tells of Bob being stricken about a year ago with arteriosclerosis. He is now in the hospital in Asheville, N. C., and would be more than pleased to hear from any of his old friends. The address is 315 Montford Avenue, Asheville, N. C. . . . A letter from **George Sprowls** who retired from the Goodyear Tire & Rubber Company four years ago states he has now gone back with a subsidiary of that company as director of research of Tyrex, Inc., with offices in the First National Tower Building, Akron 8, Ohio. He finds time for his hobbies of photography, golf, woodworking, reading and playing with stocks, which sounds like a very busy and interesting life. During the past two and one-half years he has travelled something over 300,000 miles for Tyrex, attending such conventions as American Trucking Association at the Waldorf, and the National Association of Motor Bus Owners at Boca Raton, Fla. He is looking forward to the 1962 reunion and hopes to see all his old friends there.

Roland Wright, VI, has retired from the Meredith Publishing Company, Des Moines, Iowa, but is still with them on a part-time basis as a financial consultant. His home is at 1435 Forty-first Street, Des Moines. . . . **Fred Alden, I**, writes that since retirement from Metcalf & Eddy last year he and his wife have had a very pleasant trip to Europe, returning just in time to vote last fall. They covered some 3300 miles in England, Scotland, and Wales plus 500 miles in Northern France. They also covered Ireland by bus. To quote Fred: "Learning to drive on the wrong side of the road is a hair-raising experience for those still so adorned. Mother was often terrifically scared but the fact that everybody else was driving on the wrong side of the road helped materially. At first our greatest problem was a tendency to crowd too far to the left, ride up on the curb or the pavement, scraping paint from parked cars and almost amputating the right legs of numerous bicyclists. When I was driving, those tight squeaks would cause Mother to shriek: 'Too close, too close.' Since a woman's shrieks always unnerve me, it is no wonder many of the 900-odd colored slides I took revealed an unsteady hand." From Northern France he reports that road maps and information left something to be desired but with the use of his "fluent" high school French and Mother's sign language, they were able to work out of it.

A letter from **Arch Eicher, XI**, reports that he is still hard at work with Merritt, Chapman & Scott in Cleveland. His grandson of two years and granddaughter of four months give him outside interests, as his daughter's family are now near them in Cleveland. Arch reports that **Carl Rowley** seems busier than ever but finds time to commute to his attractive home on Cape Cod. Fortunately the hurricane last fall did not obliterate his home. Being an architect, he certainly built well. Arch is looking forward to our reunion next year and will certainly be on hand.

The latest report on 1912 contributions to the Alumni Fund this year shows 209 on the class roll. Only 59 have contributed as against 71 for the same date last year. The average contribution this year is \$48.00 as against \$61.00 last year. Our percentage of contributions is very low among classes just before and after us. Don't forget to send in your contribution for our Centennial year.—**Frederick J. Shepard, Jr.**, Secretary, 31 Chestnut Street, Boston 8, Mass.; **John Noyes**, Assistant Secretary, 3326 Shorecrest Drive, Dallas 35, Texas.

'13

The first letter regarding the 48th Reunion of our class has been forwarded to 288 listed members. When you read these notes the second and final letter should be in your possession. We are looking forward to early and favorable replies from those classmates stating that they will join us at Hotel-Motel 128 in Dedham on June 9, 10, and 11, and on to Alumni Day on the 12th. It was noted by the committee that the postcard referred to the reunion as the 45th, which is naturally in error. Please accept the apologies of your scribe or the printer.

We must announce the death of a classmate, **Wistar W. Johnson**, 83 Policy Road, Salem Depot, N.H., on February 5, 1961. . . . We were very much pleased to receive a letter from **Warren Gentner** enclosing a clipping announcing his retirement from a 47-years' career with the Water Commission of Connecticut. The April issue of The Review covers most of the facts of his retirement. From Warren's letter we quote in part: "Perhaps the enclosed clipping will serve to keep the wolves from your door temporarily, at least. We have moved into a smaller apartment in Hartford. Mrs. Gentner's health has not been so good, so we have had to forget our usual trip to Florida this winter. And what a winter it has been! Our retirement plans are very indefinite but I hope that we shall be able to travel about a bit and visit some of the places which we have been unable to see." How about you and your wife joining us at the reunion in June at Dedham? . . . We appreciate the class spirit and friendliness of Herbert D. Swift (Speed). He wrote and we quote: "I have just received the Technology Review and find no mention of the death of a fraternity brother of mine (Q E K). Perhaps no one sent in this information:

Gerould Taylor Lane died January 12, 1961. P.S. Due to time out in Texas and numerous Faculty 'Votes' my graduation was delayed until 1915. Speed Swift, M.I.T. 1912, 1913, 1914, 1915." (See April issue.) "Why don't you join the Class of 1913, Speed?"

From Greenhaven Farm comes real news from **Bob Bonney** and we quote: "I've just read your class notes in the March Review. It's a bit distressing that so much of the news has to be about the passing of our old friends. Gene and I have come in pretty fair shape through the roughest winter in the history of the Maryland Weather Bureau. Our principal current activities are: (1.) Country squiring the farm. (2.) Following regimens and medication to combat degenerative diseases of advanced years. (3.) Devoting such time and means as we have to organizations fighting the unscientific and false notions being indoctrinated into our youth by medicine men masquerading as economists in our institutions of learning, including M.I.T. (4.) Various local civic affairs such as those mentioned in the enclosed clipping from one of the county papers. Our best to you and Roz." Quite a busy retiree. Here is a listing of the offices and activities with which our **Bob** is connected: President of the Maryland Angus Association; Past vice-president of the Elkton Southern States Corporation; Treasurer of the Friends of the Library; active in the Historical Society of Cecil County, Northeastern Chapter of the Maryland Archaeological Society, The Friends of Rodgers Tavern, The Farm Bureau, The Cecil County Livestock Advisory Committee, Beef Cattle Producer's Association of Maryland, Beef Cattle Improvement Association. The Maryland Angus Association sponsors an Annual Breeder's Show, showings and sales of large and small herds of Angus Cattle, as well as the Eastern National Livestock Show in November at Timonium, Md., and a Spring Sale held April 12 at the Frederick Fair. By now, we must conclude that Bob is a cow farmer. Hope to see you and Gene at our 48th in June at Dedham Motel 128.

Again comes a newsy letter as usual from Jensen Beach, Fla., from Maurine and **Allen Brewer**. Due to a previous commitment in April at Philadelphia for the annual convention of the American Lubrication Engineers, they will be unable to join us this year. Allen was one of the original advocates of selecting a motel for our 50th Reunion in 1963. He has some very constructive suggestions for our 50th. In the June issue we shall give a resume of Allen's plan. Many, many thanks Allen. . . . Have you sent in your reservations for the 48th Reunion at Hotel-Motel 128, June 9, 10, 11 and 12, 1961?—**George Philip Capen**, Secretary and Treasurer, 60 Everett Street, Canton, Mass.

'14

Two classmates proudly claim that they are now great-grandfathers. First is Professor **Leicester Hamilton**, whose

great-grandson, Peter Andrew Hamlett, arrived on December 28 at Nashua, N. H. . . . **Paul Owen's** great-grandson, Clayton Melbourne Jonas, arrived in Melbourne, Australia, on January 18. Paul says he does not mind being a great-grandfather, but his wife hates being married to one. He says you are "no older than you feel." . . . How many classmates can join this group? As far as we recall, Stirling Harper, now deceased, was our first class baby, born in June, 1911.

A postcard has been received from **Homer Calver**, postmarked on the S.S. Exeter, at Marseilles, France. Since the Exeter stops at Beirut, Lebanon, your secretary assumes that Homer is probably en route to the American University where he has been before for lectures. . . . Another to join the ranks of those in retirement is Professor **Earle O. Turner**, who is now at Siesta Key, Sarasota, Fla. He has been professor of Civil Engineering and, for the last several years, dean of Engineering at the University of New Brunswick in Fredricton, New Brunswick, Canada.

Regretfully we must record the death of **Warren C. Newbury** in September of last year. He was associated for practically his entire business experience with Samuel Cabot, Inc., located in Boston with a plant in Chelsea, Mass. It will be recalled that his older brother, John, died ten years earlier. Both were chemical engineers and graduated together.—**H. B. Richmond**, Secretary, 100 Memorial Drive, Cambridge 42, Mass.; **C. P. Fiske**, President, Cold Spring Farm, Bath, Maine; **H. A. Affel**, Assistant Secretary and Class Agent, R.F.D. 2, Oakland, Maine.

'15

What a Class-mate! Just read this delightful letter from **Mary Plummer Rice**. We certainly do admire Mary's determination and interest to begin studying all over again and in a foreign language. You're wonderful, Mary and many thanks for your generous checks—your devotion to 1915 and your kind words of praise. "Since I haven't Ben's address here, but my New England conscience is here, I feel sure I am in arrears for the 1915 50th. I'll enclose two cheques, one for the new Second Century Fund. Every time anyone asks me if I was the first M.I.T. co-ed, it makes me feel as though I were starting my second century! My, but it has been difficult to get into the habit of serious studying—maybe trying to learn in a different language has complicated the effort—but I am enjoying every course and experience at the Sorbonne—and living in Paris. London for the 12-day holidays was tremendous and I had the privilege of living there in a 15th century (at least the dining-room) British University Women's Club, Crosby Hall, and the Thames, with alert, interesting women, mostly with Ph.D.'s from all over the British Empire and Europe, all keenly interested in their work and further study. Why didn't I wake up

earlier? In the Easter, 16-day vacation, I'm going to the Leipzig Fair 'way inside the Russian zone, and will visit the psychiatric wards of the U.S.A. hospitals in Germany, visiting friends with whom I've worked in San Francisco, then Switzerland and Vienna and back through France. As soon as these courses end in Paris I'm returning to New York to see my 28-year-old son, Deane, get a B.S. from Fairleigh-Dickinson University after nine long years of effort, mostly evenings. A proud day for his mother. With best wishes to the fine committee who are doing such a valiant job."

On the afternoon of Alumni Day, June 12, at 4 o'clock, we'll have our annual Class Cocktail Party at the M.I.T. Faculty Club, Cambridge. Classmates, families and guests are all invited at no charge. Even if you don't go to the Alumni Dinner later, come to the Class Cocktail Party and see the old gang. . . . The July column will give you the play-by-play story of our April 8 Class Dinner in Boston. . . . If you haven't already paid your class dues, just stick your check in that postage-paid envelope (with a line about yourself).

Christmas remembrances from friends of 1915 included cards from Paul and Virginia (Thomas) Johnston; May Sheils; Alice Chellman; Barbara Thomas. . . . **Ruthie Place** wrote from Pasadena: "I carry on as usual only 'older and poorer.' I see a lot of my son Bill ('43) and his family in nearby Portola Valley." . . . **Cynthia Blodgett** in Bangor wrote: "I am content and happy here in Maine doing my child care work and some with the sick. The doctors at Dow Air Base keep me busy. I am proud my husband Charles was a graduate in the 1915 Class." It's pleasant to be remembered by these old class friends.

At a recent lunch with **John Dalton**, X, in Providence, I found him enjoying his retirement with a lot of big league bridge for master points. With a month of winter golf in Florida, John joins the other class nomads who certainly keep moving around. . . . **Kath** and **Wink Howlett** have just returned from Hawaii with a stop on the West Coast to visit their two married daughters and their many grandchildren. . . . In February, **Katherine** and **Max Woythaler** left for five weeks in Hawaii to get away from this miserable winter we had up here. . . . On March 11, **Otto** and **Helen Hilbert** sailed on the Christoforo Colombo for a round-the-world cruise, including port visits in Italy, Athens and the Greek Islands, Turkey, Syria, Jerusalem, Egypt, India, Bangkok, Hong Kong and a tour of Japan, where they will attend a Rotary Convention in Tokyo. On to Hawaii, they return across the Canadian Northwest to reach home June 30. Some trip, eh! . . . Each winter we feel less sorry for **Jim** and **Lena Tobey**. From West Palm Beach, Jim wrote: "We suffered acutely here for two days with temperature of 81, but it's frigid today, way down to 70. We bask on the beach regularly and although the water is a bit rough it's warm. How I pity you Aleuts, Lapps and Siberians. Regards to Fran and you-all up there." . . . Well, enough of this aggravation from

these sojourning classmates. At this writing Fran and I are planning to sail on the "Leonardo da Vinci" on April 18th for seven weeks in Europe and maybe in one of those upholstered bistros over there we'll meet up with a '15'er.

We missed **Herb Anderson** and **Henry Daley** at the New York dinner in January. Herb wrote: "Thank you for your note written from the New York gathering. When I compared notes with Henry Daley we both expected to get there and then the threat of snow just apparently changed everything. I still have a few steps to go in operating as of other days but given time and understanding friends we will bridge the gap. On March 1 we leave for Pompano Beach for the month and then expect to return by way of Birmingham, Mich., where my son and his family of six children live. May is a fine month as a rule in the country so perhaps you can both plan a trip in this direction then. There is plenty of room in the house and you could operate from there with the other classmates. Once again I thank you for your kind wishes. My best to you both."

Orton, Camp, Middlebury, Conn., Maurice Brandt, Salisbury, N. C., and Charlie "Speed" Williams, Quogue, Long Island, N. Y., wrote their regrets at missing the recent class dinners. . . . The following from a recent "American Dye-stuff Reporter" shows Phoebe (Ed) Proctor's generosity. "Proctor Chemical Co., Inc., Salisbury, N. C., has announced a four-year scholarship for a course of study in chemistry or textile chemistry at North Carolina State College. The scholarship has a total value of \$2,000 and is offered to the graduates of high schools in Rowan, Davidson, Davie and Cabarrus Counties of North Carolina. It is the stated desire of the company to make a college education available to deserving students and encourage their interest in the chemical industry." . . . In a letter to Sol Schneider, **Ben Neal** wrote: "As usual, I thoroughly enjoyed the trip to New York for the 1915 dinner. It is not so much what we do as it is the warm greetings and association with the old gang. There is in the hearts of the real core of the class an extremely strong feeling that the 1915 Fiftieth Fund is a personal, intimate thing for 1915 to the Institute, and the 1915 Fiftieth Fund Committee would like very much to keep it that way." I think we all agree with Ben and admire the magnificent job he has done for our Fiftieth Fund.

Ken Johnson has had a tough time. Gall bladder surgery was followed by cardiac trouble and a long, serious hospitalization through the winter. On March 1 Ken retired from business and is now recuperating at home in Boonton, N. J. I know everyone will join in wishing him good luck and good cheer for a speedy and complete recovery to some good health. . . . Good **Ray Walcott** devotedly looks after Fifteneers at the M.I.T. Club of New York at the Biltmore. Ray writes that it is a pleasant place for lunch and each first Wednesday (falling in a full month) is a special 1915 Day. Ray will be there on our Wednesdays and will always be glad to see you.

Anent **Ernie Loveland's** amusing and colorful letter in last month's note, **Charlie Norton** wrote from Vineyard Haven: "Ponce de Leon couldn't find the fountain of youth but Ernie Loveland did. I'll bet he could marry a 20-year-old girl now, raise a family of 10 and beat the youngest at tennis when he gets to be 20. And imagine getting good enough in French at our age to beat natives at Scrabble! I can match him in English. He ought to be able to give some interesting accounts of his travels when he gets back." . . . Then came this next letter from Ernie in Spain with more of his exciting experiences. We hope to meet him over there and learn a little French from him to help us on our return on the French Line's "Flandre." "Je vous remercie pour votre lettre de 25 janvier, et je vois très bien merci, et vous? Et la divorcée française a parler en française, l'espagnol, et l'arobe mais n'a pas pu me dire 'yes' en rien de langue, malheureusement. J'espère elle voir à Pâques. So let that be a lesson to you not to 'parlez-vous' me. (But please don't show it to anyone who really knows French.) It was nice to hear from you. The 'steam at my age?' I go hard and fast all the time, but I'm very careful not to fall down. Fear I wouldn't be able to get up again. Actually at the moment I have a swollen knee which seems to swell more after several days of tennis. Then I rest it a bit before going back to it. Don't know what is the matter with it. I have done a little swimming but water is still cold. But then I hear Marion Harbor is covered with 12 inches of ice. (That Ernie's home port here.) My present plans are to go to Casablanca to take another tour of the Moroccan back country with my French friends—the Scrabble couple and the divorcée. Perhaps I said before: When I want them all to understand I try to speak French. When I want only her to understand I try Spanish. When I amuse myself by telling her something I am afraid for her to understand and also I don't want the other two to understand I use English and get the answer back 'Je ne comprends pas.' ('Ah, c'est bon!') After the Moroccan tour I plan to come back to Spain but proceed directly to La Coruna where two Spanish men once put me on a trout stream. They have assured me that if I come back to LaCoruna they will show me trout and tennis. LaCoruna is on the north west tip of Spain and I may drift from there along the North Shore eastward then along the base of the Pyrenees, return here for next winter. I expect to come back to the States for April 1962 as I have already probably told you. Send me your itinerary if you can before I leave here for Casablanca (about March 28). I am afraid we will not be very near together at any time but it would be fun to see you both and if not too far I could drive from where I was at the time. My regards to Fran whom I remember pleasantly from that evening in Boston. Now back to studying French and Spanish. (My LaCoruna friends speak only Spanish. So my correspondence has been—and my conversation will have to be in Spanish.) My best to you both and enjoy your trip.

As for food I have eaten in Portugal chicken cooked in its own blood, and in Spain squid cooked in its ink." Ernie's power over foreign languages, that divorcée and foreign cooking is too much for me. What a guy at this age.

It's sad to record the passing of these classmates: **Fred L. Cook** on August 6, 1960 from complications following pneumonia. Fred had been a design engineer for Republic Aviation Company. . . . **Frank W. Hall** on October 28, 1960 at Baylor Hospital, Dallas, after a long cardiac illness. . . . **Royal R. Hinckley**, on August 6, 1960 in Beloit, Wis. . . . **Harry H. Law** on July 31, 1960 in Newtown, Conn. Harry had recently retired from Raybestos-Manhattan Laboratories. Our thanks to Mrs. Law who sent a check to our class in memory of Harry. The sympathies of our class go out to the widows and families of these classmates. . . . Your class dues will "help Azel." —**Azel W. Mack**, Class Secretary, 100 Memorial Drive, Cambridge 42, Mass.

'16



Our President, **Ralph Fletcher**, who had a nice two weeks skiing vacation in Switzerland in January with Sibyl and their eight-year-old son, starts off the column with a message about the 45th Reunion: "We're all looking forward to the reunion at the Oyster Harbors Club at Osterville, Cape Cod, on June 10, 11 and 12. **Steve Brophy**, as Reunion Chairman, reports excellent returns as early as March 30, and we are looking forward to one of our best, probably with the highest attendance so far, counting wives. Steve and **Jim Evans**, Reunion Secretary, have just sent out their second mailing, which includes a list of all who have so far said 'yes' (kindly furnished by **Bill Barrett**) plus a tabulation of up-to-date corrections of the geographic register sent out early in January. Jim Evans asks me to reiterate: please advise him whether it is 'yes' or 'no' if you haven't already done so. A return postal card was sent out with the first mailing from Steve, but any old kind of mailing will do. And if you want to see what **Harold Dodge** looks like as a professor tune in on TV Continental Classroom, 'Probability and Statistics,' Tuesday, May 16, 6:30 A.M. Will look forward to seeing you and yours at Osterville!"

Ralph Fletcher reports a very nice party at Joseph's Restaurant in Boston on February 16 for the members of the class in the Greater Boston Area. The prime topics for discussion were the 45th Reunion and the Second Century Fund. He said everybody seemed to get a great deal of pleasure from reminiscing about the wild and woolly reunions of many years gone by. He interprets the enthusiasm of those who attended the dinner as an indication of a great turnout for the 45th. He also was pleased to sense a strong support of the Second Century Fund. The list of those who attended follows: Steve Whitney, Izzy Richmond, Bob Crosby, Ralph Fletcher, Bridgie Webber, Dan Comiskey, Hy Ullian, Steve Berke, Al Loven-

berg, Dick Hunneman, Doug Robertson and Ed Weissbach. Some of the regulars in the area just couldn't make it. . . . **George Petit** had an appointment for his annual physical check-up making sure that he'll be ready for the 45th. . . . **Dave Patten** was travelling again, this time to Mexico. . . . **Emory Kemp** was in Florida enjoying the sunshine. . . . **John Woods** had sickness at his home. . . . **Bill Drummey** must have had a last-minute change of plans because he was expected and didn't show. . . . **Howard Claussen** missed for the first time, and we certainly missed him, but he as well as all the others will be on hand for the reunion.

No longer do we say there are hopes. Now we say there are increased assurances that we'll have several of our rather limited number of co-eds at the reunion. **Charlotte Phelps Dodge**, of Chevy Chase Village, Md., has a reunion at Smith at about the same time so she can't make the complete reunion at Osterville. But she does say there's a possibility that she and **Elizabeth Pattee**, also Course IV may come to the dinner. Elizabeth says that in 1945 she gave up her residence and office in Boston to become head of the Department of Landscape Architecture at the Rhode Island School of Design in Providence. In 1959 she retired as head of the department but is still teaching part time as associate professor. She is continuing her private practice which takes her pretty much all over New England. She notes: "My practice and teaching have included both architecture and landscape architecture, two professions that I strongly believe should be better integrated." She has done a good bit of travelling summers and has been fortunate in attending numerous meetings of the International Federation of Landscape Architects, which she says "have offered a splendid opportunity to see the contemporary work in landscape architecture, architecture, planning, etc."

Moose Jewett continues on the go up in Buffalo. Early in February we understood that he and his wife were to make a visit to Hobe Sound, Fla., then go on to Hillsboro Club in Pompano for 10 days. In August they expect to go to Europe for a short visit. Moose keeps very busy as president of Niagara Industrial Park, as chairman of the Building Committee of the new Art Gallery which is being built, and as vice-president and chairman of the Building Committee of the Buffalo General Hospital. Their three children and 11 grandchildren are all right there in Buffalo, and it was quite a gathering when all 19 got together last Christmas. Son Theodore, Jr., is head pediatric surgeon at the Children's Hospital, daughter Mary is married to Dr. Theodore Prentice, and their older son is in business in Buffalo. On our letter, asking for news or anything, even a bit of philosophy. Moose's good wife, Alexandra, noted that she couldn't tell us what his philosophy is, but "he's a good husband, father, and grandfather!" They expect to be at the reunion. . . . **Arvin Page** reports that **John Hood's** death on December 23 was very unexpected and due to a heart attack. He

understood that John had not had any previous trouble of this nature. He had been a chemist for the Erwin Cotton Mills in Cooleemee, N.C., for about eight years in their research and development laboratory. Last June we published a nice report from John which noted his satisfaction with his work in the South.

George Maverick, from down in Charlottesville, Va., where he is still actively directing an important new section of the Graduate School in the University of Virginia, expresses a view that many active retirees can endorse to the full. He says: "Isn't it fun to still be able to work and do things! I took a trip to Texas last month (school business!) and met many old friends not so lucky. And lots of old friends I didn't meet. Made me so scared that I'm going to buy a sport car while I can still have fun out of it." . . . **Nat Warshaw** reports from Hull, Mass., that he and Mrs. Warshaw are fine and that the days pass all too rapidly. Says: "Of course our happiest moments are when we are with our children and grandchildren. We are thankful they live nearby." His letterhead carries the caption "Registered Professional Engineer—Consulting Engineer—Materials Handling." Back when we were convalescing, Nat sent us about the funniest booklet we have ever seen. Called a Progress Report, and purporting to provide honest facts about a small business, it differs sharply from the usual brochures prepared by public relations experts that tend to exaggerate the truth and "often present a 'corporate image' that adds gilding and gloss to unvarnished facts." This report has enormous therapeutic value, both for the convalescing and the non-convalescing. Ask Nat about it. It's terrific! . . . **George Petit** continues his specialty of Trend Analysis. He says that most mathematical models, method of least squares, confidence intervals, etc., have a notably hard time in spotting major turning points in any data series. He has a graphical technique (including, we bet, some rather smart hard-to-define wrinkles of interpretation) that he has used for 30 years which, in his experience, spots turning points with a high probability of success well in advance of the indications given by leading economic indicators. So George continues busy with clients who have found his services so helpful. He of course is one of those who just doesn't miss reunions, so will be at Osterville in June.

Steve Berke is coming along well on shortened hours but it is everyone's guess that shortened hours are not something he thought up. He had a heart attack last July down at his West Harwich summer place where he had hibernated to work on some business bids. He spent time in the Cape Cod Hospital in Hyannis. As he puts it: "For two weeks I stayed in bed even to being fed by the nurses, and believe me, if there is anything that makes one weak, it is that treatment." He says business is not so good and "maybe I will teach school pretty soon." A year earlier, around Christmas time, he and Mrs. Berke jetted out to Los Angeles where their daughter was located, with the thought of finding

better-than-New-England weather for Mrs. Berke's recuperation there. They stayed for ten days at the Beverly Hilton, the "nonplus ultra" of all hotels, he says. Met Francis Stern in the lobby there, saw the Tournament of Roses on New Year's Day in Pasadena, and marveled at the organization of space and facilities for the many spectators. Steve says his color transparencies of the tournament, of Disneyland, and of Marine Land, with its 20-foot whale and leaping porpoises, came out well. Maybe he'll bring them to the 45th. Their next stay was at "fabulous" Palm Springs, at a large western-style ranch of 40 acres with swimming pools, cabanas, etc. Steve with his bent for constructing things, must of course visit big things, so next they flew to Las Vegas and took a 40-mile de luxe trip to Hoover Dam. Even to Steve, with his superhighways, bridges, and South Station overpasses, the dam was overawing. His reaction to Las Vegas was something else again—he says if you are rational and retire about midnight, the next morning you breakfast with those who sat at the gambling tables all night. We look forward to seeing the Berkes at Osterville. . . . **Ralph Spengler** finds considerable interest in the 1916 Geographic Register sent out by Steve Brophy in connection with the 45th Reunion. He and his wife have been looking into places in North Carolina and Virginia, and he notes **Allen Pettee's** location at Tryon, N.C. They have been impressed with Charlottesville, Va. where we already have two representatives—**George Maverick** and **Wesley Blank**. But while thinking of southern places, Ralph can't help ruminating "but—our daughter and four grandchildren in Wellesley Hills exert a drawing force hard to resist."

In the April issue we mentioned briefly that **Bob Wilson** was to have given a talk in Trombay, India, on the occasion of the dedication of the Canada-India reactor. But our information was only sketchy. Actually he headed a U. S. Atomic Energy group invited by the government of India to participate in the formal dedication of the research and engineering test reactor, a 40 MWT natural uranium, heavy-water-moderated reactor, as well as other recently completed atomic energy facilities including a uranium metal plant, a fuel fabrication facility, and a zero energy reactor for lattice investigations. The government of India had advised that representatives of Canada, Great Britain, and Russia would participate. Following the dedication, a series of scientific lectures and discussions were held in Bombay. There Bob spoke on "Reactor Development in the United States."

E. Blythe Stason, who retired as dean of the University of Michigan Law School last September, expects to be on hand at the reunion in June since he is now "more or less a free agent." As he noted: "I am not sure that a lawyer and an ex-law dean has any worthy place at an M.I.T. reunion. Probably I shall not understand the language used by my classmates. If, however, I am ostracized because of my retrogression from engi-

neering to law, my wife and I can walk the beach and enjoy the sunshine." We can state with confidence that, with advertising men, salesmen, economic predictors, and clergymen among our reunionists, there'll be no need to walk the beach for reasons of ostracization. . . .

Cy Guething sure enough wrote from Harbour Island in the Bahamas in February where he was starting an eight weeks' stay with obvious glee. His card showed the famous pink-sands beach, a spot that Steve and Jess Brophy regularly extol. Says Cy: "Here we are and love it. We are in W. McC. Martin's cottage and so feel financially secure. His yard is full of hibiscus, bougainvillea and birds, including a well fed mocking bird 'operettaring' three to five hours per day. The fishing is good and the bathing—none better. Find that floating becomes easier with each week. More buoyant! See you in June, sure!" . . . The **Steve Brophys** sailed for Europe late in February for a two-month stay. This is something they had been looking forward to with a great deal of pleasure and Steve promised to send a post card "from here and there." They will be back the first of May.

Joe Barker has gone and done it again. Last June he took on an active consulting job with responsibility for developing basic standards for data processing equipment. But it hasn't stopped there. Apparently the organization he was with, the Office Equipment Manufacturers Institute, found him to be what we all know him to be, so dynamic and resourceful that late in February he was made executive vice-president of the Institute and also president of its wholly owned subsidiary, the Office Equipment Manufacturers Exhibits, Inc. The Institute is composed of the leading companies in the U. S. manufacturing and distributing the entire gamut of office equipment from furniture and supplies to typewriters, adding machines, bookkeeping machines, duplicating machines, dictating machines, up to and including the most erudite and sophisticated types of data processing computers. Joe says it is a most challenging assignment and will keep him extremely busy "for the next several years." The present headquarters offices are located in Washington, D. C., but will move to New York at the earliest moment where they will be consolidated with the Data Processing Group offices which Joe established in New York some eight months before. We hope Joe told them he could do all the work in three and one-half days a week so that he can have time off even though he's not used to it! . . . **Duke Haines** writes from Glastonbury, Conn. He retired as Production Engineer in 1958, after 28 years with Pratt & Whitney Aircraft division of United Aircraft. Since then, he says, he has spent his time fishing (both winter, through the ice, and summer), gardening, mowing the lawn, refinishing furniture (hobby), and generally taking life easy. Says he and Mrs. Haines are thinking seriously about moving to Florida, "as the winters are beginning to get a bit too much, and warmer climate seems much preferable, for the arthritis." He

should find plenty of 1916 company in Florida as the Geographic Register shows. . . . And speaking of warmer climes, **Len Stone**, in the middle of February, was waiting for the airway strike to be called off, so that he and Mrs. Stone could start off for San Juan. They were scheduled with two other couples to have 10 days' sailing at San Juan, and we believe they had to curtail sailing time by only two or three days. From there they were scheduled to visit St. Croix (consult your atlas as we did), then on to Florida to finish out the month of March. . . . Here's more on Florida! The **Emory Kemps**, reporting by post card as all good travelling 1916'ers should, had no doubt in late January that Florida "is the Sunshine State." They were then on Siesta Key, Sarasota, just off the Gulf Beach. Emory writes: "Only one cloudy day so far and two nights down to 33°. Sorry you are having such a tough winter. Our days are running 70° to 75° and it is hard to believe it is January and not June."

Irv McDaniel, writing from Malaga, Spain, early in February, regrets he has had to change one of his expectations, the one about attending the 45th Reunion, because daughter Mary arrives over there at the end of May and expects Mom and Pop to show her the sights. Irv has, on the side, shall we say, and as you know, been carrying on a research project of sorts on the subject of nite-clubs; which ones are good or awful and why. Regarding the submitted data he's collected from Italy, Sicily, Egypt, Lebanon, Rhodes, Athens, Kasaqasi, Istanbul, Paris, Geneva and Andorra, we find the problem of editing most difficult indeed. So difficult, we are going to put it off until tomorrow. But Irv's description of his trip to Russia and his impressions are something else again. They were almost a month in Russia, went where and when they wanted to, and took pictures wherever they went. He says: "We were given the V.I.P. red-carpet treatment. We were on no tour, just Kay and I, and we really saw the country—Moscow, the Caucasus, the provinces of Georgia and Abkhazia, Lake Ritsa, two days on the Black Sea to Yalta via Sochi, Tuapse and Noworossijsk, Kiev and Stalingrad. . . . Everyone's reactions are different. To me Russia represents an enormous avalanche getting larger and larger. . . . What they have accomplished in the last 50 years is remarkable." He feels we have terrific difficulties ahead. "I don't envy the new administration all their many and varied problems." He finishes by saying: "However, this is still a wonderful world. And now it is time for us to consider going home. We have loved it over here and have never been happier than when we have been in Spain. It is ideal here on the Costa del Sol, ideal in every respect."

Tredick Hines writes from Huntington Woods, Mich., and tells of the cycle he's gone through since retiring in 1959. He retired after 26 very busy years as an architect for the Chrysler Corporation. He then busied himself doing a lot of things around the house and the gardens that he didn't have time to do while he

was working, plus occasional fishing trips to Northern Canada and Maine. Then it happened! As he puts it: "But retirement is not to my liking. As time went on I became more uneasy and bored until I got fed up with the whole business. So I have gone back to work and am now architectural consultant for the Detroit Museum of Art. . . . I feel I am very lucky." This is apparently a varied and interesting job which he is tackling with great enthusiasm. The museum undoubtedly feels it is lucky too! . . . **Free Hatch** said in February that they had "had" it this winter, the worst on the Cape in 58 years, but that much of the east coast had had it worse than they. Commenting on **Emory Kemp's** report in the January issue: "Emory Kemp is a nice fellow and would build a friend up when possible, but, the eight summer homes belong to my son and not to me. I am the janitor and maintenance crew." He says that gardening, duck hunting, and fishing take up the rest of his time, and having said that, he was reminded that he'd better get busy on the painting and refitting of four boats before summer. Finally: "Was 70 years old last week and intend to retire in about 15 years more or unless I can find something else to keep me busy. Best regards."

Allen Pettec writes from Valencia, Venezuela, where he will complete a two-or-more year stint in May, as a multi-duty expert in production, quality control, planning, etc., in the cable making business. He's still working regular hours, he says, "and my wife has to force me into a noonday siesta, so perhaps I can keep percolating for a bit. My best engineer quit recently for domestic reasons, so I have had to plunge into telephone cable design, bringing up-to-date our old design standards and putting them in shape so that cost estimates and factory work orders can be drawn off on a routine basis. We are also getting into high voltage rubber cable, and perhaps will be in the ACSR business, so I shall leave here with mixed emotions." He notes that their telephone standards are a bit different in Venezuela, and because of the earlier British influence they use star quads instead of the U.S.A. two twisted pairs. He says, for your secretary's benefit, that statistical quality control plays a very small part in the lines although they should use more of it. But they protect quality by using only the best materials and General Cable's best compounds. Although we have worried about Allen at times, he says things are quiet where he is. . . . **Dave Patten** suggests that anyone still on the convalescent list should get a copy of "Decision at Trafalgar" by Dudley Pope. He says it is superbly written and of historical value in this age of civilization. Also: "As some one put it: 'Western Civilization is a combination of the Hebrew belief in God, the Christian idea of compassion, the Greek love of truth, and the Roman genius for law'—plus that great English tradition." . . . **Buck** (Frank) **Bucknam** writes from Auburn, Calif., where he moved after retirement over two years ago. He had two reasons, he

says, for moving. He wanted to be nearer his married daughter and family (only 100 miles to Reno), and he wanted a warmer climate in the winter (average there in January is 46°F). Before they moved there, they had seen the town several times and took the local paper for five years, checking on real estate ads. He is two miles from the center of town, has an acre of land with a fine view, and gets an inch of water, 11.5 gpm from the Pacific Gas and Electric Company to ditch—"70 lb. static pressure at the house." He has all the work he wants gardening, pruning fruit trees, and keeping up the house. He and his wife are enjoying retirement very much. As he put it, it rains there in the winter but not in the summer; the low humidity and cool nights in the summer are ideal. With no rain from the last of April until October they have to water lawns at least once a week.

And so the column comes to a close. It's now just about a month until the 45th Reunion. Remember: one of the reasons Steve Brophy sent you a 1916 Geographic Register was to aid you in calling or writing to, say, five others and urging attendance at the reunion, June 9, 10, 11, Oyster Harbors Club, Osterville. Finally, many thanks to the many who have written in, and if it just happens that you have not been quoted in the column during the last 12 months, now is a good time to send in that little written contribution. See you in June.—

Harold F. Dodge, Secretary, 96 Briarcliff Road, Mountain Lakes, N.J.; **Thomas D'A. Brophy**, 45th Reunion Chairman, 470 Park Avenue, New York 22, N.Y.; **James M. Evans**, 45th Reunion Secretary, 451 Van Houten Street, Paterson, N.J.

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Will you join the secretary in a salute to Regional Vice Presidents of the class whose efforts in contacting every member of the class over the next few months will bring news items from many whom we have not heard from for a long time. These Regional V.P.'s are: **Tubby Strout** for New England; **Ken Lane** for New Jersey; **Tom Meloy** for the Southeastern states; **Dick Lyons** for the Texas area; **Frank Peacock** for the Middle West; and **Neal Tourtellotte** for the West Coast.

An Allied Chemical news release from February reads: "**C. C. Coakley**, Director of Operations for Allied Chemical's National Aniline Division, has retired after 43 years with the Company. Mr. Coakley began his career with Allied Chemical at the Marcus Hook, Pa., plant as a chemist in 1917. In 1923 he transferred to National Aniline's Buffalo, N. Y., plant as operating superintendent. Between 1923 and 1946, Mr. Coakley was promoted to other positions including superintendent of maintenance and assistant plant manager in charge of Engineering, Maintenance, Construction and Power. In 1946, he was promoted to plant manager of the Buffalo plant, a position he held until 1955 when he became director of operations and transferred

from Buffalo to the general offices in N. Y. City. Two years later, Mr. Coakley was moved to the Chesterfield, Va., plant in the same capacity. He is a former director of the Buffalo Chamber of Commerce; member of the Buffalo Club, Buffalo, N. Y.; the Rotunda Club, Richmond, Va.; the American Chemical Society; American Institute of Chemical Engineers; and was one of the organizers of the Technical Societies Council of the Niagara Frontier. A licensed engineer in New York State, Mr. Coakley and his wife Claudia, reside in Richmond, Va." Coak advises that he has no particular plans for the present and will continue to live in Richmond, Va. . . . **Warren L. Tapley**, who lives in West Falmouth, Mass. says: "My wife and I are living a life of ease on Cape Cod. I have been retired since January, 1960. I have a daughter living in Connecticut who has three hectic children; two boys and a girl. We are able to stand the racket for an occasional visit, and they all come to the Cape for a month during the summer. My health is O.K. Outside of a 'plumbing job' which was not serious, I am still in good operating condition."

Stuart Gurney of Stoughton, Mass., has an interesting retirement story: "I have been retired now four years and have not found it a particularly painful experience. Knowing this retirement business was coming up, I bought, about 14 years ago, a piece of land on the outskirts of Stoughton of about 20 acres, within reasonable commuting distance from Boston where my office was located. I was always interested in growing things, and I had already exhausted the possibilities of the usual backyard garden and had even gone somewhat into hydroponics for lack of space. The land I bought was varied in character; in fact it proved to be a veritable museum of eastern Massachusetts soil types, all the way from deep rich loam to pure sand and gravel. It is mostly wooded with a pond and swamp and a couple of good hay fields.

"I put in a few fruit trees, and tried out in various locations about every fruit and vegetable crop that will grow in this climate, and a few that will not. In the past several years I have developed a program that supplies all the fruit and vegetables that we can use each year, making use of processes of freezing and preserving, and storing enough in the cellar to cover the whole year. Since it is impossible to limit such a program to our own small personal needs, I sell the excess, which some years is considerable, locally at retail. With experience, it is no particular trick to beat the quality of the supermarket fruit and vegetable departments. The cash pays for seeds, fertilizer, insecticides, power equipment, etc., and leaves a little over. Strawberries are the biggest cash crop but the trouble with them is that I haven't found a variety of quality that doesn't interfere with class reunion time. With one exception I have avoided farm animals because they demand daily attention. The exception was a pair of Toulouse geese. They produced very efficiently, but the original gander and the male offspring developed the habit of chasing off everybody, with no

discrimination at all between friends and itinerant salesmen. They became so obstreperous that we finally ate them. In retrospect they were so delicious that I think they were worth the trouble. I would do it again if I could find a fearless man who would undertake to feed them when we wanted to go away for a week or two. Animals are out unless you want to stay home all the time. In the winter, there is plenty to do when the weather is suitable; cutting out trash trees, brush, fence poles, tomato stakes, firewood, etc. When the weather is too foul, I find more satisfaction than I thought possible in reading subjects that were not, for perfectly good reasons, included in the curriculum at M.I.T. in our day. I limit my nights out to district representation and the new public school building problem."

Tharratt G. Best writes: "My own record can be made rather brief. Mrs. Best and I are rapidly approaching our ruby anniversary. We have two daughters, both married, and three grandsons. I am supposed to be retired but find my days very full, being chairman of the Board of this bank, now nearly 100 years old. (First National Bank of Boonville, N.Y.) I am also chairman of the Municipal Commission for Light, Power and Water. I do a moderate amount of engineering and surveying locally, for towns, villages, school districts, corporations and individuals, but am now inclined to farm out the heavy jobs, where an acme of stamina is indicated. My hobbies are fishing, golf, gardening, travel, and also historical writing. The latter requires a lot of research but is intensely interesting. The days are simply too short, even at 68. Incidentally, I interview candidates for M.I.T. and ran the local campaign one year for the Annual Giving." . . . **John Harper** advises us: "I am still alive and toiling. Working for yourself is good job insurance, if you can maintain momentum. My local marketing enterprise (Harper Oil Co., Long Island City, N.Y.) is a very small segment of the petroleum industry, and distinguished for its lack of romance and affluence."

John M. Martinez of New Haven, Conn., brings us up to date as follows: "I am a bachelor of long standing and have been retired from business for three and one-half years. I keep busy doing some committee work for the United Fund and also indulging in some of my hobbies: aviation, photography, and figure skating. I also like to go to concerts and attend lectures on interesting subjects. I do a moderate amount of reading and some library research on various subjects that crop up from time to time." . . . **Clair E. Turner**, who on the letterhead of the "International Union for Health Education of the Public" is listed as "Haut-Conseiller" sends the following: "I send this news note before taking off March 1 for two months with the World Health Organization and UNESCO for a consultant assignment. Recent and current interests and activities are a third grandchild, the eleventh edition of 'Personal and Community Health,' advisory services to the International Union for Health Education, and

participation in plans for an International Conference on Health and Health Education in Philadelphia, June 30 to July 7, 1962. I join you all in growing pride at the achievements of M.I.T."

F. Leslie Ford of Auburndale, Mass., sends the following: "I have two daughters, Pricilla and Constance. Pricilla is married and has four fine sons. Connie graduated from Duke and is now working in New York. I am taking a leave of absence from my work as architect for Chas. T. Main, Inc., to take a somewhat lengthy trip. My wife and I leave February 23 for Teheran, Iran, to visit my brother **Wendell**, who was with the class until 1916. He has been in Iran for four years with Geo. Fry Associates installing American business methods in Iranian Industry. His work has been with the beet sugar industry which seems to be getting well organized and capable of producing a better economic status for many Iranians. From Iran, we head eastward through India, Kashmir, Thailand, Hong Kong, Japan to Honolulu. We will return home in July and will spend the summer at Mattapoisett on Buzzards Bay." . . . **Ray Brooks**, our active Class Agent, left his new home in Summit, N.J., and headed south by automobile. He drove without schedule or any detailed inhibitions except that he planned to be in Mexico in March for the annual Fiesta of the Mexico City M.I.T. Club. As soon as he recovered from that, he planned to drive farther north and west, and possibly end in Honolulu, probably not in his automobile. He will be back home when, as, and if. . . . **Bill Neuberger** is spending several months in Miami, Fla., promoting the sale of his moth preventative "Kildew." . . . With General Gavin going to Paris, **Ray Stevens** has returned from retirement, so-called, to the presidency of Arthur D. Little, Inc., in Cambridge.

Here are a few rules for 65 plus'ers: 1. Before your birthday, keep circulating the story that you are two or three years younger. If people hear it often enough they'll believe it for years. 2. When in the company of younger people, ask their advice on everything. Pretty soon they'll begin to believe that they're older than you are. And brighter. 3. Don't get too fat. Thin people always look younger. We know a man who is 91, but he's so slender nobody figures him to be more than 89. 4. Avoid talking about such subjects as gray hair, Social Security, Lincoln's inauguration etc. 5. Lastly, don't worry about any particular birthday; concentrate on plans for the next 25 years.

Bill Colleary writes from Pasadena, Calif.: "My wife and I drove out here in November to spend the winter with our daughter and her five children. We plan to drive home in May. Our home on Cape Cod (Centerville) is for sale and we plan to establish residence in New Hampshire, which has no (1) sales tax, (2) state income tax, and (3) inheritance tax to spouse or children. About November 1 of each year we would then fly out here by jet with the money saved in Massachusetts taxes. We might establish a 1917 M.I.T. community in New Hampshire." . . . **Irving Fineman** writes:

"I don't know whether I should be classed as a renegade (After serving for five years as an engineer officer in the U.S. Navy, and practicing civil engineering for five years, and teaching for three years on the engineering faculty of the University of Illinois, I turned novelist, and Simon & Schuster is now readying my seventh book, 'Woman of Valor,' for publication this summer.), or as a prodigal son. (I have served as editorial consultant to RAND Corporation, and am presently engaged on a book about a physicist.) But I offer as mitigating circumstances my two sons: Joseph, graduate of Cal Tech and a Fulbright scholar at St. Andrews, now research physicist at M.I.T.'s Lincoln Lab; and Jonathan, in the U.S. Navy on Radar Ship Mills. As for my 'retirement program'—I just don't have any. There's a book to be written on the relation of the scientific spirit to religion in our time, for which I am doing research in California this winter. That's one nice thing about writing. You can migrate with the birds."—**W. I. McNeill**, Secretary, 107 Wood Pond Road, West Hartford 7, Conn.; **Stanley C. Dunning**, Assistant Secretary, 1572 Massachusetts Avenue, Cambridge 38, Mass.

'18

The world is an urgent place. Night is always pursuing day, youth is in too much of a hurry for recognition and success, the senior citizens feel the pressure of the far horizon, and editors are always screaming there's a deadline to be met. . . . **Joe Kelley** has left Brooklyn Heights, N.Y., for the pastoral and industrially less urgent scenes of R.F.D. #3 Southbury, Conn. . . . **Fred Philbrick** reports feeling much better since the urgent need last fall for some repairs to his plumbing. The operation was a complete success, though it has taken a long time to get his strength back. He was married to Hildegarde Mattauch in Miami last January. . . . Urgent also is my need to thank **John Markham** for helping a certain grandson with a school assignment on aviation. John shared ideas bubbling from the hot springs of his mind, and with gentle grace suggested to the lad that an earned grade of "A" would be appropriate for the glory of M.I.T. The kid made it! All of which reminds us of the Institute professor's daughter who told her father she got the highest mark in the class . . . of those who didn't pass.

We are still in California where your scribe is far from the founts of information usually available. Hence, the urgent deadline almost compels rounding out with personal news. I have nearly finished my 17th book. This one is on "Mutual Merit Rating" and is being written in collaboration with Henry Wood Shelton, an old associate of Frederick W. Taylor and a former professor in the Tuck School of Business at Dartmouth. Besides ink running down my quill, there have been lectures at various colleges (including the University of California) and organizations like the San Diego

Personnel Managers Association. We have also had some stimulating evenings with unusual people, including Dr. Harold Urey who won a Nobel Prize in Physics. It is a delight to observe the working of his mind and his unassuming kindness.

The professor who cares about his students has a lifelong reward of meeting them in various places. Desmond Pengelley '39, is a supervisory engineer for Convair in San Diego and, with 15 engineers under him, is working on guidance problems in space defense. His thinking is literally out of this world! In our conversation he pointed out that the airplane was used first for reconnaissance in World War I. Naturally, the enemy devised means of shooting it down. Soon the plane tried to protect itself. Combat planes and bombers resulted. How logical to expect the same sort of sequence taking place in outer space. It could even be that before long we will have machines that take off, fight at fantastic altitudes, and land again on some airfield. . . . We saw Robert Day '48 in Los Angeles where he is now sales manager for Waugh Engineering. He has a lovely family of three children. The oldest is a daughter, about 11, who certainly thrilled this old heart with a goodnight kiss. Readers of last month's column will recall that in driving across the continent we saw cars from every state except Vermont and Wyoming. There is no longer an urgent need to complete the roster. Both were sighted in La Jolla on the same day. We hailed the Vermont car to find it was being driven by a Montpelier physician who was in medical school with my brother. Who says, small world? It's tiny!—**F. Alexander Magoun**, Secretary, Jaffrey Center, N.H.

'19

In response to a postcard mailing, we have news of several members of the class. . . . **George Bond**, Paulsboro, N.J., retired on February first. It sounds as though he will have plenty to do as he is active in Scouts, Y.M.C.A., Kiwanis and church work. He has six grandchildren. This summer he plans to drive to California to visit his younger daughter who has twin girls a year old, and on the way he will visit parks and other places of interest. . . . **Jack Braverman** retired early in 1960 and occupies himself with charitable work with adolescents. His daughter, Nancy Kaplan, lives in Salt Lake City and is the mother of two children. His son, Richard, is with Rittmasher, Adelbert Voisin & Co., N.Y.C. . . . **Louis A. Brown**, Counsel in the field of Construction-Management, reports from California: "My health is excellent my behavior exemplary and no spectacular news to report." . . . **Alexis R. Wren** is doing some writing and considering the possibility of teaching next year. Subject: something related to Management or Personnel.

We have received from the Institute the following new addresses: **Kenneth A. Wright**, 1010 First East Street, Vicks-

burg, Miss.; **Victor N. Samoyloff**, R.F.D. #1, North Maine Road, Vineland, N.J.; **Laurence W. Cartland**, 25 Charlestown Rd., Claremont N.H. . . . As of February 1, 72, or 25 per cent, of the members of 1919 had contributed the sum of \$6,178 to the Alumni Fund. By the time this is published, the Second Century Fund drive will be well under way for general subscription, and this will give us an additional opportunity this year to give help in building up M.I.T.'s worthy program for the future.—**Eugene R. Smoley**, Secretary, 30 School Lane, Scarsdale, N. Y.

'20

It is pleasing to note that one of our class stalwarts is now associated with the Institute. **Al Burke** has been appointed business manager of the M.I.T. Medical Department. His duties will include administration of the various non-medical activities of the Medical Department. . . . We learned with regret of the death of **Col. Charles B. Meyer** of Bradenton, Fla., on October 30, 1960.

Of significance to those who are beginning to think of retirement is the fact that there appears to be a regular colony of 1920 men developing in Duxbury, Mass. Number one from the standpoint of long association with the town is our distinguished classmate, **Ed Ryer**. . . . **Jack Keller** and **Mich Bawden** are also long-time residents of Duxbury, and a relative newcomer is **Roger McNear**. **Mich** may not be considered a classmate, strictly speaking, but he has been with us on some reunion occasions and is so well known to members of the class that we think he belongs in the above quartet. I have it on good authority that not only are these men getting along well together but that their wives are still all on speaking terms.

It is too early at this writing to report on the Centennial Convocation, but I am confidently expecting to report goodly attendance from our class in subsequent notes.—**Harold Bugbee**, Secretary, 7 Dartmouth Street, Winchester, Mass.

'21



Just one month to go to our big 40th Reunion, starting on Friday, June 9, and extending through Sunday, June 11, at the Shore Club and villas of the Mayflower Hotel on Manomet Point, Plymouth, Mass., and followed on Monday, June 12, by Technology's Centennial Alumni Day on campus in Cambridge. You now have another mailing from **Mel Jenney's** 40th Reunion Committee with full details. Enclosed with this mailing is the registration card on which we hope you have indicated or will soon indicate all your needs for reservation at Plymouth and Boston. If you haven't already returned this card to **Chick Kurth** with your registration fee, please do so at once. We'd all like to have you and your wife join us in the good times to which we

look forward on this happy double anniversary. Whether you would like to do your reminiscing on the good old days at the Big White Knowledge Factory on the Charles, in the comfort and relaxation of the beach or the sun deck at the Beach Club, at the bar or clambake pit, or in fierce competition—swimming, golf, boating, fishing, tennis, shuffleboard, bowling on the green, badminton, horseshoes, croquet, ping pong, etc.—just specify your likes and they'll be met with every modern facility. The setting is ideal for a reunion and you will find the entire 1921 group to be most congenial companions. So why not return that registration card right away, while it's fresh in mind, and treat yourselves to a bit of enjoyment you'll never duplicate again anywhere? At the early date on which these notes are being prepared, more than 80 members of the class have signified their intention of attending the June festivities and most of them will be accompanied by wives, sons or daughters. Preliminary applications are still being received, the latest from **Tom Bartram**, ie: **Scripps Booth**, **Larry Buckner**, **George Chutter**, **Fritz Ferdinand**, **Harry Field**, **Gus Kinzel**, **Helier Rodriguez**, **Bill Sherry**, **Art Turner**, **Joe Wenick**, **Dave Woodbury** and **Merrill Youtz**, with the **Betas** still to be heard from.

Our worthy Assistant Class Secretary, **Ted Steffian**, says that the detailed reunion program you received packs a lot of extras that words can't describe. For instance, the Friday evening New England clambake on the beach is one of those culinary delights for which the Mayflower is world famous. Deep sea fishing can be arranged for those who have never experienced the thrill of playing the big ones. What is listed as "An Historical Tour" promises to be a bigger hit than were the hilarious parties at the floating gardens of Xochimilco during our 1921 reunion in Mexico. The banquet will be punctuated with prizes and surprises. Even so prosaic an item as the Sunday evening buffet turns out to be one of the amazing specialties of the house, according to **Ted**. Besides making reservations in Boston for Alumni Day, the Reunion Committee will arrange for transportation to Cambridge with those who are driving directly to the Institute from the reunion. The Alumni Day program and ticket applications will be sent by the Alumni Association if you request them when you return the Association's annual ballot. If you have not done so, address a request to the Alumni Office, Cambridge. Some 25 of the class indicated their attendance at the M.I.T. centennial exercises which observed the actual anniversary date in April. A report of their doings will appear later.

Class Prexy **Ray St. Laurent** has written and phoned various items. He attended the January Alumni Council meeting, where he ran into **Mich Bawden**, **Josh Crosby**, **Chick Kurth** and **Ace Rood**. **Josh** has just retired from **B. F. Goodrich**, Watertown, Mass., where he has been located for the last 39 years. . . . **Irv Jakobson** has returned from a business trip to Lisbon and Madeira. . . . **Jack Parsons** reported he is visiting

in Vienna, Austria. . . . Both **Ray** and **Ted Steffian** reported another meeting of the Reunion Committee in Boston—Chairman **Mel Jenney**, **Chick Kurth**, **Larc Randall**, **Chick Dubé**, **Mich Bawden** and **Ted**. **Mel** spent a few weeks in Florida during March before returning to reunion activities.

We recently visited **Manasquan, N. J.**, and dropped in at the office of **Munnie Hawes**, only to find that he and **Alex** were in Rome, Italy. They will be back in time for the reunion. . . . **Ted McArn** writes that he has moved from **Applenon, Wis.**, to **Worcester, Mass.**, where he is living at 29 Beechmont Street. . . . Colonel **Philip M. Johnson**, formerly of **Ann Arbor, Mich.**, has moved to a new home at 41 Norwood Street, Portland 5, Maine. **Ethan A. Beer** says his new home address is 4134 Holman Lane, St. Louis 21, Mo. . . . **Robert E. Waterman** is one of eight science executives named as the advisory committee of the summer science institute of the Pingry School in New Jersey. . . . **Saul M. Silverstein** was the speaker at the February meeting of the Southington-Plainville-Bristol Industrial Management Club in Bristol, Conn. . . . **Ted Steffian** has been made an area chairman for the M.I.T. Second Century Fund. . . . **Irv Jakobson**, Chairman of our Forty-Year Gift Committee, has sent a most heartening letter to all members of the class, with our current status relative to the goal which has been set for support of the obligations undertaken by M.I.T. . . . Did you read the article on Technology in "Fortune" for February, 1961?

Stewart P. Coleman, a vice-president and member of the board of Standard Oil Company of New Jersey, retired on April 1, 1961. A native of Corpus Christi, Texas, he started in the oil business as a chemical engineer with Humble Oil and Refining Company after his graduation from Rice Institute in 1920. Following receipt of master's and doctor's degrees from Technology, he headed Humble's technical and development services. In 1933, he joined Jersey Standard as manufacturing representative and later chairman of a central study and advisory committee. He became the first manager of the co-ordination and economics department. He was elected a director in 1946, a vice-president in 1955 and served as chairman of the co-ordination committee. During World War II, he was with the Petroleum Industry War Council and Petroleum Administration for War as director of the program division. He is a member of the Military Petroleum Advisory Board and the Foreign Petroleum Supply Committee and served as chairman of the Middle East Emergency Committee. He is a trustee and former chairman of the board of trustees of the National Industrial Conference Board; a trustee of the New York Infirmary and of Hollins College. **Stew** and **Mrs. Coleman** live at 365 Barrett Road, Cedarhurst, N. Y. They have two daughters.

The annual appearance of the sprightly folder entitled "M.I.T. Alumni Make News" underscores the contributions of the Class of 1921. Selected by the editor were references to **Joe Fowler**, builder,

director and administrator of "Disneyland," four presidents of national societies: **Joe Gillson, Jack Healy, Jr., Harry Junod and Gus Kinzel**; and the award of the James Douglas Gold Medal of the A.I.M.E. to Gus. The nimble editor lists ships named for M.I.T. men but failed to include the U.S.S. Healy, a destroyer named for the late Lieutenant Commander **Howard R. Healy, U.S.N.** . . . Colonel **Charles F. Baish, U.S.A.**, retired, is chairman of the mathematics department of Bethesda-Chevy Chase Senior High School, Bethesda, Md. . . . **Robert M. Felsenthal** is president and general manager of the Exmet Corporation, Tuckahoe, N. Y. . . . Writing from his home, Meltzers Gate 5, Oslo, Norway, **Ditlef Hald** says he has retired from his engineering responsibilities in the head office of the Norwegian State Railways. His two children are both married and he has two grandchildren.

Thanks to the kindness of Harold Bugbee, Secretary of our friendly neighbors, the Class of 1920, and an assist from his brother, Perk, also 1920, we have a copy of an outstanding tribute paid to an outstanding member of the Class of 1921. It is an illustrated pamphlet from the Rotary Club of Honolulu, honoring **Harry P. Field** and proposing him for the office of director of Rotary International. Much too long to quote here, the brochure reveals that Harry was president of the Rotary Club of Honolulu, variously member and chairman of some 12 of its committees, and a district governor active in many regional and international committees and conventions. He has a long list of community endeavors, such as that of serving as an Educational Counselor for Technology. His recent retirement from the Hawaiian Electric Company as vice-president and commercial manager after 34 years of service has served only to increase these activities. When he and Catharine arrive at the reunion directly from their long trip to the Rotary convention in Tokyo, we hope congratulations will be in order for a newly elected director of Rotary.

Arthur E. Raymond is a member of the board of trustees of Aerospace Corporation, the non-profit organization engaged in missile projects and military space systems. Recently retired as senior vice-president for engineering of the Douglas Aircraft Company after 35 years of aeronautical engineering and industrial management, he has served as a member of the National Advisory Committee for Aeronautics and as a consultant to the Secretary of Defense. He received the Certificate of Merit for his contributions to aircraft production. He is a member of the National Academy of Science and an honorary fellow of the Institute of the Aerospace Sciences. . . . **Richmond S. Clark** has retired after 39 years with Humble Oil and Refining Company, most recently as head of the coordination division of the refinery at Baytown, Texas. Rich was hired by Humble before graduation and his first job was the engineering, together with **Stewart P. Coleman**, of the conversion of the crude stills to operate under the vacuum process. Rich later served in technical and development de-

partments, as assistant to the manager of refineries, assistant to the chief refinery engineer, head of process engineering design and superintendent of the butadiene plant. He is active in the Coast Guard Auxiliary, the first commander and a founder of Flotilla 67, member of the Houston Yacht Club, Goose Creek Country Club and various Masonic bodies. He is an ardent golfer, fisherman and photographer. Writing to Ray from his home in Baytown, Rich says he and Mary Louise will attend the reunion. Son Rich, Jr., a University of Texas graduate, is with a Houston building supply firm. There are two grandchildren. Rich receives mail via P. O. Box 3807, Baytown.

Why wait? Send that completed reunion registration card and fee to **Chick Kurth** at once. This is certainly the time and occasion for you, your wife and guests to come back to visit with old friends, to enjoy a relaxing vacation and to help celebrate the beginning of the second century of service for M.I.T. Tell us if there is anything we can do to help you make the most of this golden opportunity, an exceptional one which will never come our way again. Write to **Mel Jenney** at the address below for any further information or assistance regarding the reunion. Be sure you are there. Get your course mates and fraternity brothers to join us, too—**Carole A. Clarke**, Class Secretary, International Electric Corporation, Route 17 and Garden State Parkway, Paramus, N. J.; **Edwin T. Steffian**, Assistant Class Secretary, Larsen, Steffian, Bradley and Hibbard, 711 Boylston Street, Boston 16, Mass.; **Melvin R. Jenney**, Class 40th Reunion Chairman, Kenway, Jenney and Hildreth, 24 School Street, Boston 8, Mass.

'22

Preliminary arrangements are being made for our usual get-together on Alumni Day in June. Be sure to join many of our class for up-to-date reports on personal and class progress at that time. . . . Our treasurer has made headlines in the Newark Evening News as follows: **Everett W. Vilett** has announced that he would seek renomination to the Millburn Township Committee in the Republican primary election. He will have completed a three-year term at the end of the year. Vilett, who lives at 70 Stewart Road, Short Hills, N.J., is chairman of the governing body's law and finance committee. He is the only committeeman whose term expires this year. . . . **Bill Rich** has written from Lake Chapala, Jalisco, Mexico, of his February and March escape from cold and snow. He was to be back in Vero by mid-April. . . . **Frederick S. Blackall, Jr.**, has been elected chairman of the board, treasurer, and chief executive officer of the Taft-Peirce Manufacturing Company of Woonsocket, R. I., having been succeeded by his son, F. Steele Blackall, 3rd, as president of the company.

Among the area chairmen for SCF are listed: Francis M. Kurtz, Miami; Charles E. Brokaw, Colorado; Whitworth Fergu-

son, Buffalo; C. George Dandrow, New York City; Barrett Hindes, San Francisco; Horace W. McCurdy, Seattle; Harold E. Koch, Wisconsin; Thomas H. West, Worcester County. . . . **George Dandrow** is pictured in Newsletter 3 in his usual hearty, vigorous role meeting with alumni leaders to map out the campaign. . . . **Tom West** is honored in a photograph for having set a precedent in giving and in soliciting thoughtful gifts from others. . . . **Robert H. Brown and Frederick N. Dillon** are on his committee. . . . Among those who have new addresses are: Prof. **Laurence R. Culver**, 2 Tudor City Place, New York 17, N.Y.; Dr. **Preston Robinson**, P.O. Box 1240, Williamstown, Mass.; Dr. **Walter M. Saunders, Jr.**, Woonsocket, R. I.; **C. Hall Baker**, Cape Elizabeth, Maine.—**Whitworth Ferguson**, Secretary, 333 Ellicott Street, Buffalo, N. Y.; **C. George Dandrow**, Assistant Secretary, Johns-Manville Corporation, 22 East 40th Street, New York 16, N.Y.

'23

Our class can now boast of a first-class prize winning fisherman in the person of **Royal Sterling**. Nice going Roy! The following letter from him is self-explanatory, and tells of some of his activities during February: "Mary and I are vacationing in Florida. On the way home we are stopping at Tampa, Mobile and New Orleans. (Home is in Rhode Island.) Thought you might be interested to know that last Wednesday we flew over to West End in the Grand Bahama Island. Friday, on the way back from fishing we stopped to put out light lines with small bait to do some bottom fishing. I caught an 180-lb. shark on a 30-lb. test line. It took over an hour to boat it. It is good for a citation and prize in the Bahamas Winter Fishing Tournament. The previous record was a 75-lb. one caught in the Andros Island area." . . . **Miles Pennybacker**, President of Voltarc Tubes, Inc., of Norwalk, has been awarded a certificate of appreciation by the Council for International Progress in Management (USA), Inc. The award was presented at the annual dinner of the council held at the Hotel Pierre in New York on January 31 "for his contribution toward the protection of the free world against the forces of tyranny, and toward an ever better standard of living for all peoples through advancing the philosophy of scientific management at the international level." Pennybacker was chairman of a team of American business men who took part in a seminar held last September in Buenos Aires, sponsored by the International Co-operation Administration, a division of the State Department, to introduce and discuss American business methods with a group of South American businessmen and manufacturers.

Charles T. Burke, as director of planning, is a member of the management committee of the General Radio Company. This company has had the committee form of management for over 20 years. Each member of the-committee is

head of a functional operating group. . . . The Firestone News Service, dated January 7, 1961, announces the appointment of **Frederick B. Stevens** as manager of mileage sales at the Firestone Tire & Rubber Company. A 36-year Firestone veteran, Stevens joined the company's student training class in 1924. After assignments in the development department and in truck, bus, coach, and cab sales, he became general sales operating man for the company in 1931. During the 30's he served in the operating and sales divisions of the truck and bus tire department. Mr. and Mrs. Stevens reside at 2040 Braewick Drive in Akron. . . . Miss **R. M. Karapetoff Cobb**, Technical Advisor to Lowe Paper Company, Ridgefield, N.J., presented a technical paper during the 46th Annual Meeting of the Technical Association of the Pulp and Paper Industry (TAPPI), February 20-23, 1961 at the Hotel Commodore in New York City. Miss Cobb's paper was entitled: "Effect of Viscosity on the Penetration of Adhesives into Paper." Miss Cobb is a graduate of Tufts University with a B.S. degree in Chemistry. She also holds an M.S. from M.I.T. She is a member of the American Chemical Society, the American Physical Society and the Society of Rheology. She makes her home at 77 Grozier Road, Cambridge 38, Mass.

We regret to report two deaths. . . . **Frank F. Hobson**, Lowell and Tewksbury plumbing contractor, and head of the firm that bore his name, died February 7 at Lowell General Hospital, a few hours after he had suffered a heart seizure while at work. His home was at 113 North Street, Tewksbury Center. He was in his 61st year. Born in Lowell, a son of the late Charles H. and Mabel (Foster) Hobson, he was educated in Lowell schools and was graduated from Chauncy Hall and Bryant and Stratton school in Boston. He later furthered his education at M.I.T. He had been secretary of the Lowell Master Plumbers Association for 25 years. A member of All Souls Church of Lowell, he was a past master of William Sewall Gardner lodge, AF&AM of Lowell, and a past master by affiliation of Wamesit lodge of Tewksbury. He is survived by his wife, Gertrude F. (Caldwell) Hobson, a son, Richard F., and a daughter, Joan C. Hobson, both of Tewksbury; two brothers, Charles F. Hobson of Charleston, W. Va., and Col. George F. Hobson, USA, (ret.) and a sister, Miss Sarah Hobson, both of South Portland, Me. . . . **Robert Richardson** died on December 15, 1960 in Clarcona, Fla., but we do not have any further details to report as yet.

We wish to report the following address changes: Brig. Gen. **William G. Manley**, 6430 S.W. 57th Court, Miami 43, Fla.; **Edward McSweeney**, Perkins-Goodwin Co., 1 Rockefeller Plaza, New York 20, N.Y.; **William J. O'Shaughnessy**, 284 Albemarle Place, Macon, Ga.; **James I. Rooney**, 3690-38th Street, N.W., Washington 16, D.C.; **Hermon F. Safford**, 6435 Camino de la Costa, La Jolla, Calif.; **Dunbar L. Shanklin**, 12 Everett Avenue, Winchester, Mass.; **Harold S. Van Buren**, Harbor Road,

Harwich Port, Mass.—**Herbert L. Hayden**, Secretary, E. I. du Pont de Nemours & Co., Leominster, Mass.; **Albert S. Redway**, Assistant Secretary, 47 Deepwood Drive, Hamden, 17, Conn.

'24

The **Lehrer** Saga continues through the Orient, Land of Mystery. These progress reports constitute something of a problem. They're so boiled down to start with it's difficult to do much more briefing and do them justice. However, knowing The Review editors and what they'd say if I asked for two full pages each month, we'll give it a try. . . . Last month we left Ray and Dot sampling 165 brands of Scotch in San Francisco. They were able to make their 707 in time, however, and headed across the Pacific for Tokyo with stops at Hawaii and Wake. They saw Mt. Fuji on the way in and a little while later were sampling a gin concoction of the same name in the Imperial Hotel. The Imperial, by the way, has "seven superb restaurants." You'll find as this trip goes on the Lehrers are eating and drinking their way around the world in high style.

There were several days in Japan with all sorts of trips and sortis. One was to a hot springs area, but Ray balked at taking a bath with ruddown by a "chubby little Japanese girl . . . water was too hot!" They were aghast at the terrific traffic snarls they ran into almost everywhere. "All roads are overcrowded. There are plans for new ones as well as toll roads, but there is just no place for the people to go to make room for the roads. It was interesting to note that a driving school for training new drivers has its own private roadway system with built-in hills, bridges, etc. It would be suicide for learners to get out on the highway." And here's another bit that emphasizes the overcrowding: "The population pressure has made cremation mandatory, as there is no room for burial. A new apartment building is being constructed to house the ashes of the departed—just as we would lay out a new cemetery." At a time when public expenditures for education are skyrocketing here, "There are no free schools, so parents have to pay, but it is compulsory for children to go through the equivalent of our Junior High School."

They went to the Kabuki Theatre, a Japanese wrestling school, a tea ceremony, and a demonstration of flower arranging. Trains only stop at a station for one minute, and if you don't make it you wait for the next one. In the resulting crush lots of buttons get lost, so every station has a button box which you're free to paw through and hunt for your own. They went up the Tokyo Tower, "43 feet higher than the Eiffel Tower. At about 400 feet is an observation platform which holds 2,000 people." (Your provincial secretary had never heard of it.) Theatre in general does not exist, but there were plenty of night clubs, mostly strip-tease "with emphasis on the 'strip.' I might add this was not part of the tour but had to be ferreted out by oneself." That's our Ray.

So at last they boarded a Thai Airlines DC-6 for Taiwan. "First, hot towels. Then cigarettes were passed, then a snack (lots of sandwiches), shortly thereafter cocktails and hors d'oeuvres, then filet mignon, etc., with champagne and wines, and finally coffee, liquors and petits fours." Well, he can always go on Metrecal when he gets home.

They arrived in Taipei on the Chinese New Year. "Taiwan seems to be a home for some ten million resigned souls living a life of austerity. The streets are crowded but mostly with people. There are few cars. Underground bomb shelters ready for active use are everywhere. Nationalist Chinese seem to have firmly ingrained in them not 'if' they will return to the mainland but 'when.'" Then to Hong Kong with its "seething mass of humanity, misery and filth," its sampans, junks, tailors who make clothes while you wait (they got some), and a side excursion to Macao where they saw the gate into Red China, lost a bit in a gambling casino, and, of course, "had a very interesting Portuguese dinner with excellent wines." That letter ended: "P.S. Here we are in Singapore, 75 miles north of the equator with bright sunshine and 90 degree heat—wonderful!" We'll tell you all about Singapore food and drink next month.

Now to more mundane things. . . . Col. **Walter H. Kennett** has been nominated for a second four-year term as Maine director of Civil Defense. . . . Brig. Gen. **Frank J. McSherry** is the new president of the Boston Boy Scout Council. . . . **Hank Simonds** made it back to California. He got snowed in at New York, but from there on had bare roads all the way, including crossing the Sierras. He did pick up one sad bit of news. **Helen Hardy Blackwell** died of a stroke on January 26. She was a widow and leaves one daughter.

The trip that the **Ingram Lees** had planned failed to materialize when Ike had to have a major job of plumbing done on his house. . . . The **Griffin Crafts** got an unexpected trip because of adversity. Three bouts with viruses made them think that the Caribbean would be healthier than New York in mid-winter, so they took off for St. Croix for a month. They went over to San Juan on a visit and tried to reach **Al Roig** without success. Then, at a party for actors and patrons of the San Juan Drama Festival, the first person they ran into was patron Roig, just back from New York. The evening was long and the daiquiries plentiful, and a gay time was had by all.

A couple of new Executive V.P.'s: **Jimmie Crist** has been just a plain V.P. of the Southern Company heretofore, located in Birmingham. Now he's back at home base in Atlanta with the more impressive title. . . . And Admiral **Felix B. Stump**, long top man of our Pacific Fleet, has retired. He's now in Valley Forge, Executive Vice-president of the Freedom Foundation.

A last sorry note: **Leon T. Colman** died unexpectedly in January. Leon was a World War I veteran. From graduation until World War II he was with Public Service of N.J., then for three

years with the N.Y. Ordnance District. He retired in 1945 and returned to his home town of Lawrence, Mass. Leon was not married and lived with his mother. . . . That's it for this time. Any of you who are hopping off on exciting trips, please take a tip from the Lehrers. Those letters are the sort of thing that makes a poor class secretary shout for joy. We'd love to shout with you.—**Henry B. Kane**, Secretary, Room 1-272, M.I.T., Cambridge 39, Mass.

'25

News this month has been very sketchy. If you expect to see 1925 in these pages each month, some of you who have been unheard from for many years should drop the secretary a line! . . . **Ralph Gow** continues to make news and it is difficult to keep up with him. Just recently, the Boston Herald noted that he had been elected to the Board of Directors of Miniature Precision Bearings, Inc.

The Waterbury, Conn., papers have noted that **Donald G. Vaughan**, Assistant Vice-president of the Aetna Casualty and Surety Company, was the guest speaker recently at a dinner meeting of the Naugatuck Valley Chapter, American Institute of Industrial Engineers. As previously noted in this column, Don has been in the field of safety engineering almost from the time he left M.I.T. and is most definitely recognized as one of the authorities in this area. . . . **Herb Taylor** has gotten in touch with me through his son David who happened to be at M.I.T. a few days ago on a recruiting expedition. David graduated from Williams College and later from Northwestern Business School. He reported that Herb spends most of his time at his headquarters in Florida but business does take him to Chicago about once a month.—**F. L. Foster**, Secretary, Room 5-105, M.I.T., Cambridge.

'26



Here we are once again, not at Pigeon Cove but aboard the 8:00 A.M. jet for a 45-minute flight from Boston to Philadelphia. . . . Recently a change of address came through for **Maury Ash** so I sent him a note: "What gives?" Here is his reply: "Dear George, My, how observant you are to notice my change of address. Last April we grew sick and tired of the long winters around Chicago and took a trip to Florida with the intention of finding a location in which to settle. Punta Gorda Isles, since becoming a part of the City of Punta Gorda, was the answer to our dreams so we purchased a lot and ordered a home built. It was completed on the first of August last year and we were on the spot to move in. Just in time, incidentally to welcome Hurricane Donna who visited us on September 10 and caused extensive damage. That, however, is long since repaired and we are enjoying our retirement immensely. Our home

is located on a canal and I have a boat docked in our backyard. We are only a few hundred yards from open water, which is Charlotte Harbor, and 25 miles from the Gulf of Mexico at Boca Grande. Fishing in Charlotte Harbor and the many little streams and two large rivers that feed it is excellent as it also is from our dock. We occasionally fish in the Gulf for grouper, blues and mackerel. In the harbor all catch sea trout, snook, red fish and snapper. Our son Michael graduated from M.I.T. in 1959 and has since received his master's degree in mathematics at Princeton where he is now working on a doctor's degree. Helen is a sophomore at the University of Illinois. Susan and Jeannette are here with us. Sue is a sophomore in high school and Jenny, age six, is in first grade. Incidentally, Jenny was born in Japan while I was in the Army. I challenge any of our classmates to produce a youngster (not grandchild) under six years of age! (Class Secretary's Note: Send entries to me.) I am sorry that I missed you in June of '59 when I dropped in at Pigeon Cove. Why don't you repay the visit and see us at Punta Gorda Isles? Bring a swim suit since we have a pool in our enclosed patio. You won't need a fishing rod; we have plenty of them." Maury's address is Maurice L. Ash, Jr., P.O. Box 222, Punta Gorda, Fla.

We are now airborne and the thrill of a jet take-off never diminishes. Once in the air the sensation of luxury and air rushing by the hull makes me feel that I am off on a holiday because most jet flights we have taken are vacation flights. In May we head back to Bermuda and this time in a jet. After one of the most rugged New England winters in 15 or 20 years we are looking forward to basking in the sun. Now let's get on with the news. . . . **Bud Wilbur** is quoted in the Indianapolis Star in a way that brings us quickly up to date on his activities: The "A B C's" of science, rather than details, theories and history, is being emphasized today in modern engineering schools, the Indianapolis alumni group of M.I.T. was told. Dr. John B. Wilbur, 1926 M.I.T. graduate, head of the school's civil engineering department 14 years and now a consulting professor of engineering, reported to a centennial dinner of the local M.I.T. Club, "Science and technology is advancing at such a rapid rate that the kind of education essential a generation ago is outmoded as we prepare students for problems of the future which today are beyond prediction or comprehension. M.I.T. now puts less emphasis on the art of engineering and details of its practice and increases stress on science and mathematics." We haven't seen Bud since he entered his new role but understand that he and Lillian have given up their Cambridge apartment and now make their residence at their country place in Hancock, N.H., with sorties to Cambridge during the week. Sounds like a good deal but I haven't found out how to work it.

That guy, **Draper**, is in the clippings again but since he has been monopolizing our honor rolls for the past five years we need not give you any background; just identify the new honor. Dr. Charles

Stark Draper of M.I.T. has been named winner of the 1960 Annual Achievement Award of the Newton, Mass., Chamber of Commerce. It was presented by Homer R. Oldfield, Jr., '38, group vice-president, electronic components and devices, Raytheon Manufacturing Company, January 25 at a dinner meeting in the Totem Pole Ballroom, Newton. Remember, Stark! At our 35th Reunion you are chairman of the committee to Demonstrate the Definition of a Dyne-Centimeter. We hope you are getting some practice. . . . This will probably be my last opportunity to mention the reunion in the notes since the June issue probably will not be out until after reunion. There isn't much for me to add to the notices that **Jack Larkin** tells me are being mailed as I write these notes. We had a dinner meeting of the reunion committee a couple of weeks ago, called by Chairman **Bob Dawes**. In addition to Bob and your secretary, Jack Larkin, Bill Meehan and Don Cunningham attended. **Pink Salmon** was out of town and since he wasn't there we assigned him to job of registration. This will all be explained in the notices. As I have previously mentioned, I spent a weekend at the Hotel Belmont two years ago and it is the ideal spot for a '26 reunion. It had just been entirely rebuilt when I was there and I understand that the owners have been dumping money in ever since. It has the largest and most delightful cocktail lounge of any place on Cape Cod, a private beach with cabanas, bath houses, a bar, etc. In addition the hotel has a new manager who was manager of the Weston Golf Club where Jack Larkin belongs, so Jack has taken on the assignment of making sure that we get a little bit extra and that everything goes smoothly. Therefore, if you don't like your room, the service, the strength of your drinks, the temperature of the ocean or anything at all, just speak to Jack and he will fix it up.—The landing gear has just been lowered, and I must sign off. So as we land—Cheerio until I see you at reunion next month!—**George Warren Smith**, Secretary, c/o E. I. du Pont de Nemours & Co., 140 Federal St., Boston, Mass.

'27

A recent newspaper clipping from the Medford, Mass., Mercury advises that **Frank Marcucella**, Vice-president and General Manager of the John A. Voipe Construction Company, Malden, and a member of the board of directors of the Malden Evening News and the Medford Daily Mercury, has been named president of both newspaper corporations. Frank has had more than a quarter of a century of experience in the construction industry, having served as construction engineer of the U.S. Military Academy at West Point and as construction superintendent of numerous major projects before first joining the Volpe company as job superintendent in 1942. He is a member of the National Society of Professional Engineers, Boston Society of Civil Engineers, Massachusetts Building Congress,

and Society of American Military Engineers. From 1943 to 1946 he had active service as commander, Civil Engineer Corps, U.S. Naval Reserve, and served as commanding officer of the Advance Base Construction Depot, Hawaiian Islands, and project development officer at Davisville, R.I. Long active in civil affairs, Frank is a member of the Corporation of the Lawrence Memorial Hospital in Medford and a trustee of Chauncy Hall, a prep school in Boston.

The results of the triennial elections of the Section of Meteorology of the American Geophysical Union have been announced, and we note that Dr. **Henry G. Houghton** has been elected vice-president, to take office July 1, 1961 for a three-year period. Professor Houghton is head of the Department of Meteorology at M.I.T. . . . The Wellesley, Mass., newspaper reports that **Leslie J. Weed** has been nominated to be vice-president representing the Northeastern District of the American Institute of Electrical Engineers (AIEE). The announcement was made by the Institute's Nominating Committee at the opening meeting of AIEE's Winter General Meeting held recently. A fellow of AIEE, Leslie is currently secretary-treasurer of the Northeastern District, and is also chairman of the Institute's Distribution Subcommittee. He is head of the Electrical Engineering Section, Engineering and Construction Department, Boston Edison Company, with which company he has been associated since his graduation. . . . **Glen D. Jackson** has been reappointed as our 1927 class representative on the M.I.T. Alumni Council.

A recent phone call from **Ed Damon** divulged the news that he was en route to Nice, France. He apparently is enjoying his retirement as he was cruising in the West Indies and part way down the west coast of South America when I previously heard from him in December. Now that Ed has some leisure time, let's hope he will try to make it to our 1962 reunion. . . . **Harry Franks** and I collided at the corner of 46th Street and Madison Avenue the other day. Harry looked well and, when I asked him to give me an idea of what he was doing, he pulled out cards indicating that he is president of Transelectron, Inc., and treasurer of J. C. Webster & Co., Inc., both at 50 State Street, Boston. . . . **Richard L. O'Donovan** is associate chairman for the Second Century Fund in the Miami, Fla., area. . . . **Bob Bonnar**, **Anson Rosenthal**, **Jim Lyles** and I had lunch the other day to talk about a New York Class of 1927 get-together lunch under the aegis of the M.I.T. Club of New York at the Biltmore. We set a tentative date of May 31, giving us plenty of time to promote a good attendance. Rosie, who is one of the few remaining bachelors in the class, was driven to our rendezvous via blonde-driven Thunderbird.

An interesting article appeared in the Boston Globe recently on METCOM, Inc. (Microwave Electronic Tube Company of Massachusetts, Inc.), a year-and-a-half-old firm, of which **Harold Heins** is vice-president. This firm expects over \$3 million in business in 1961-62. They now

employ 140, including 35 to 40 graduate engineers. Their tubes are being used in Ballistic Missile Early Warning Systems now set up in Greenland and Alaska, with another to be installed in England. METCOM was also a prime contractor for Project MADRE, the Navy's low frequency radar system for which this company designed microwave tubes. Forty per cent of their business is under prime contracts for the government, another 40 to 50 per cent for subcontracts, and the remainder devoted to commercial projects. Harold has two daughters, one of whom is a physician. . . . From the Alumni Fund 1961 Progress Report as of January 31, it is interesting to note that our class shows an average contribution of \$87.00 to the 1961 Fund. This compared with \$74.00 for the class of '25, \$44.00 for '26, \$35.00 for '28, and \$38.00 for '29. Our average contribution for 1961 is slightly better than that of 1960, which was \$83.00.

Since 1958 the following awards were received by **Karel J. Bossart**: Man of the Year in Science (By California AF Association); James Wild Rocket Memorial Award—ARS; and the Sylvanus Albert Reed Award—IAS, for significant contributions to the design and development of the ATLAS ICBM; the Air Force Exceptional Civilian Service Award. He is a fellow of ARS and IAS. Belgian-born Karel is assistant vice-president of Atlas-Convair Division of General Dynamics. His Convair design group is responsible for the rocket design of the MX774 Research Rocket and the ATLAS ICBM. He is called the "Father of the Atlas." He makes his home at 1364 Missouri, San Diego, Calif. . . . All of us who attended Tech at one time or another should read the article in February Fortune magazine. It is an interesting exposition of the effort being made to put just the right blend of science and engineering together at M.I.T., and, while you have the magazine in your hand, you will want to glance at the article about Maxey Jarman of the class of '25, now chairman of Genesco, Inc. . . . It is with deep regret that we record the death of **Lawrence A. Foster** in Pensacola, Fla., on January 9. A letter from Mrs. Foster stated that he was buried in the Barranca National Cemetery in Florida.

Of interest are the following up-to-date addresses of classmates recently received by the Institute: **Philip E. Darling**, 313 Springfield St., Park Forest, Ill.; Professor **Royal M. Frye**, 11 Whitcomb St., Belmont 78, Mass.; **Charles Germain**, Bethlehem Chile Iron Mines Co., Agustinas 1070, Of. 122, Santiago, Chile, S.A.; **B. Allison Gillies**, El Camino Del Norte, Rancho Santa Fe, Calif.; **George C. Houston**, 318 North State Rd., Briarcliff Manor, N.Y.; **Palmer D. Kountze**, 6415 Midnight Pass Rd., Sarasota, Fla.; **Francis A. Mesker**, 6 Portage Road, Florissant, Mo.; and **Walter D. Nordling**, 20 Deborah Road, Warwick, R.I. Brig. General **William R. Frederick**, Route #1, Aledo, Texas; **William Kaplan**, 547 Lakewood Boulevard, Park Forest, Ill.; **Elmo W. Landers**, 601 East Clinton Avenue, Huntsville, Ala.; and **James H. Williams**, 139 North Main Street, West Lebanon,

N.H.—**J. S. Harris**, Secretary, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

'28

We have a report this month from **Jim Cullen** in Winchester, Mass., where he has been living a very busy and useful life. Besides conducting his own business and raising a big family, Jim has found time to participate effectively in local government activities. His business interests are centered in small contracting and in the management of his own real estate. Jim is a former chairman of the Winchester Board of Selectmen, former chairman of the Middlesex County Commissioners, and is at present a Town Meeting member in Winchester. The Cullen's greatest pride is in their children. Franceline attended M.I.T. and graduated in 1955. She married Eugene Leary, M.I.T. '54, and they now have two boys and two girls. Lorraine graduated from Lowell State Teachers College and taught in the public schools of Arlington, Mass., and Sandwich, Mass., before being married to Otto Metz. They have two children, both girls. James A., Jr., is a First Classman (Senior) at West Point and planning a service career with the Air Force. He has been on the varsity hockey team for three years and was on the freshman team his first year. Son Frank graduated from the University of Massachusetts in '59 and is engaged in business locally. He was co-captain of his gym team in the senior year. Brian is a freshman at Brown University where he is studying for his A.B. degree. He has contributed to the family athletic record by winning his numerals on the freshman football team. Gerald is the youngest son and is in the eighth grade at school. Jim believes that the musical training of his wife Helen (graduate, New England Conservatory of Music) has had a wonderful influence on the children. All are music lovers to some degree.

Jim Donovan has undertaken to serve as a zone chairman in the Boston area for the Institute's Second Century Fund Drive. This should remind the rest of us to give our utmost to support this very important effort. . . . We regret to report that our classmate, Maj. Gen. **Joseph S. Bradley**, died on January 17, 1961. His last address was at 1850 Summerland Ave., Winter Park, Fla.—**Walter J. Smith**, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.; **George I. Chatfield**, Secretary, 11 Winfield Avenue, Harrison, N.Y.

'30

It seems to me rather intriguing that notwithstanding our quite specialized undergraduate training, the members of our class have managed to end up in surprisingly diverse occupations. A review of the class records reveals, for example, that we have a sizable number of practicing physicians in the class. In this group is

Bernie Canter from whom a report was received this month. Bernie is a G.P. in Springfield, Mass., where he is on the staff of Wesson Memorial Hospital. He has two children, Lois 16, and Mark 13. He reports that from time to time he sees Carl Binnig '31, who is a surgeon on the Springfield Hospital staff. . . . **Ted Bridge**, on the other hand, has definitely not departed from the engineering fold. He is with Catalytic Construction Company of Philadelphia, but is presently located in Oak Ridge where he is working on the design of one of the more esoteric varieties of particle accelerator known as a 100 Mev isochronous relativistic cyclotron. As an avocation he works on the programming of pipe stress problems for computers in which he has "developed an unreasonable interest," and writes occasional technical articles. He has a daughter, Anne, who is a sophomore at Northwestern.

Allen Shepherd, who was chief metallurgist of the Taft-Pierce Manufacturing Company for 23 years has changed jobs. He has become senior metallurgist for Bostitch, Inc., of East Greenwich, R.I. Allen is a past chairman of the Rhode Island chapter of the American Society for metals and a member of the American Institute of Mining and Metallurgical Engineers, the British Iron and Steel Institute, the National Committee for Tool Steels, and the Metallurgical Problems Committee of the National Machine Tool Builders Association. His son, Allen, 3rd, is a student at the University of Michigan Law School. . . . **Ken Bucklin** is manager of New Products Engineering for the RCA Electron Tube Division in Harrison, N.J. His hobby is amateur radio and his call letters are W2CDP. The Bucklin daughters, Brenda and Jean, are in the freshman and junior classes respectively at Kent State University, Ohio. . . . **Frank Burley** is superintendent of engineering for Western Electric in Indianapolis. He lists his hobbies as golf, bridge and square dancing. His daughter, Barbara, will enter Indiana University next fall and son, Charles, is a high school sophomore. . . . **Dick Boyer** is vice-president of Anken Chemical and Film Corporation and lives in Basking Ridge, N.J. He has three children, Margaret 20, Robert 18, and Gretchen 15.—**Gordon K. Lister**, Secretary, 530 Fifth Avenue, New York 36, N.Y.; **Ralph W. Peters**, Assistant Secretary, 249 Hollywood Avenue, Rochester, N.Y.; **Louise Hall**, Assistant Secretary, Box 6636, College Station, Durham, N.C.

'31



By now you've received the final announcement of our 30th Reunion. We are all looking forward to seeing you then. Remember the dates: Friday, June 9 through Monday morning, June 12. Wianno Club, Wianno, Cape Cod, Mass., is the location. And if you want further information, rush a note to **Ralph Davis**, M.I.T. Class of 1931, 60 Congress Street, Boston 9, Mass. . . . While in Chicago a few weeks ago, I had dinner and spent

a pleasant evening with **Hope and Randy Binner**, and their oldest boy, **Burton**. They are looking forward to the reunion and the chance to see their old friends. **Burton** is a graduate of Dartmouth and has also received his M.B.A. in business. . . . See **Marcel Aillery**, **Herb Raymond** and **Charlie Terwilliger** at the M.I.T. Club of New York frequently and our only regret is that more of you don't join us. . . . **George Carter** has been appointed administrative assistant to the vice-president of engineering for Bomac where he is concerned with the administrative aspects of planning, budgeting, scheduling reporting and purchasing for the research division. . . . **Fred Simmons**, 4 Melbourne Road, Milton, Mass., has been named New England district manager for Raytheon Company's Distributor Products Division. . . . **Bob Wilson** has been appointed general manager of Sears, Roebuck and Company's retailing operations in the Greater Boston area. . . . **Jim Fisk** has been elected to Harvard's Board of Overseers. . . . Now that summer is just around the corner and Westport is quite pleasant, Louise and I hope any of you who are passing through Westport, Conn., will stop in to see us . . . but, in any event, we are all looking forward to seeing you at the reunion.—**Edwin S. Worden**, Secretary, Westport, Conn.; **Gordon A. Speedie**, Assistant Secretary, 90 Falmouth Road, Arlington 74, Mass.

'32

By the time you read this we shall have had our class get-together at the Centennial Dinner. **Bob Semple** was to come on from Detroit to lead our class at this affair. Bob, our President, has advanced fairly well in the musical world from the days when he was leader of the Techonians and played the sax in the Tech Show. He is now president of The Detroit Symphony. Bob writes: "We have a fine orchestra. Detroit is behind it and our ambition is to have it ranked with New York, Boston and Philadelphia. It is close as it is." Congratulations, Bob, on this high civic post. Bob has also been elected a director of the Atlantic Mutual Insurance Company of New York. He has also been nominated as one of the Alumni Members of the M.I.T. Corporation. With **Ben Archambault**, this gives our class two members on the Corporation.

Colonel **Arthur L. MacKusick** has left his position as head of the Integrated Range Mission at the White Sands Missile Range in New Mexico where he has been since January of 1959. In February he took over his new duties as Chief of the Atlantic Missile Range at the Army Field Office at Cape Canaveral, Fla. His son, a graduate of West Point, followed Art to Korea and has recently returned to the States where he is working for a master's degree in Mechanical Engineering at the New Mexico State University. Art hopes to be able to make our reunion a year from now. We will look forward to seeing you then. . . .

Harry L. Moore has been appointed eastern regional manager of the Purchasing Department of Mobil Oil Company in New York. Harry has done extremely well since he joined Socony Mobil as a service station salesman in 1932. He has held various service, sales and engineering positions. Congratulations on this promotion. . . . **Henry A. Phillips** has been appointed chief designing engineer of the Water Bureau of the Metropolitan District Commission here in Boston. HAP has been a member of the MDC engineering design staff since 1937. This is a wonderful position of responsibility which he now holds because the MDC is charged with bringing water to all of Metropolitan Boston and the thirst of this area never seems to be quenched.

Montgomery Ferar has been in the news in connection with the discussions about "planned obsolescence." He is vice-president of Sundberg-Ferar, Inc., one of the five largest industrial design firms in the country. Among their clients are such names as Whirlpool, Sears Roebuck and Company, Sperry-Rand, International Harvester, Square D, and RCA-Victor. Among other things they designed the Whirlpool Miracle Kitchen that was the hit of the American exhibit at the Moscow Fair in the summer of 1959. This may be a far cry from the architecture which he studied at M.I.T. but it certainly is carrying out the design concept. Many of us come into contact with his work since "the low silhouette, sculptured appearance was designed into IBM typewriters by Sundberg-Ferar a few years ago." He agrees that design is a competitive weapon and adds, "Our challenge is to get other changes than appearance into products; get functional obsolescence, so people will buy in a saturated market. To put more appeal into a product you must put in more convenience." Maybe our wives can thank one of our classmates for making their kitchens more attractive and more functional. . . . Your secretary is headed for Europe again, this time to give a presentation before the United Nations Scientific Committee on the Effects of Atomic Radiation, in Geneva. I am taking my son, James, aged 15, with me. **Juan Serralach**, our Spanish classmate, has agreed to keep him for four days while I am attending the Geneva meeting. My boy has been studying Spanish at Vermont Academy and this will give him a good opportunity to practice and learn how an affluent Spanish manufacturer lives in Barcelona. Juan has a beautiful home and a fine family and always has the welcome mat out for the Class of 1932—**Rolf Eliassen**, Secretary, Room 1-163, M.I.T.

'33

Your errant secretary is full of apologies for the long hibernation; the reasons relate to the Second Century Fund, on which many of you are spending much time and energy too. A good cause, man, a good cause! To name a few: **John A. Long**, Senior Vice-president of Electronics Corporation of America, is directing the

general solicitation in the greater Boston area. And this is a prodigious task which John is carrying out with great effectiveness. **Pete duPont**, Prexy of our far flung class, is turning the crank with a fine hand too. **Ellis Littmann** in St. Louis calls home base regularly with good leads and good ideas. A host of others have their shoulders to the wheel.

Ivan Getting makes the news as president of Aerospace Corporation in California, leaving his former post as vice-president of Raytheon. Aerospace is a public service, nonprofit enterprise dedicated to research in missiles and space problems of a fundamental character. . . . If you have been looking for **Outerbridge Horsey**, take a trip to Rome. He was the U. S. minister in Tokyo and is now charge d'affaires at the embassy in Rome. . . . Speaking of ambassadors, '33 has one par excellence; **Cal Mohr**. Cal makes it a point to look in on classmates wherever he travels. He reports a visit to **Art Mason** in Pittsburgh. Art's son is a freshman at the University of Delaware. **Ing Madsen's** son is at West Point following two years at V.M.I. Moving on to Rochester, Cal reports that **Bob Smith's** younger daughter is a freshman at Centenary College. Bob joined the proud rank of grandfather several months ago. **Walt Swanton**, also in Rochester, is in good fettle and will be chairman of the panel on radiation waste disposal this fall at the A.I.Ch.E. meeting. Turning south to Kingsport, Tenn., Cal reports a good visit with **Andy Regan**, whose son is a freshman at Harvard this year.

Alexander J. Minkus recently was promoted to bureau deputy manager in the Metropolitan District Commission here in Boston. The MDC has been having its troubles and needs good men like Alex in the top management. . . . It is with deep regret that we report the death of **Jack Farmer** last February. Jack has been serving good causes in Pembroke for many years. A fun loving, jolly character as a student, Jack was a real friend of man. . . . Our popular and prominent mate, **Dick Morse**, received the Decoration for Distinguished Civilian Service, the Army's highest civilian award, last December. Dick has agreed to continue as director of R. and D. for the Army until June. We bet Dick will turn up after June running some equally important and impressive operation.

Among significant moves: **Fred Johnson** from Greensboro, N. C., to Whitinsville, Mass., where Ferd will be with the Whitin Machine Works. . . . Reminder: Come on back to Cambridge for Alumni Day; it's only two years to our next reunion and we have to make plans! Any volunteers for the committee?—**R. M. Kimball**, Secretary, Room 3-234, M.I.T., Cambridge 39, Mass.

'34

Sam Groves, who is president of United-Carr Fastener Corporation and about whom several words appeared in our class notes last month, now comes in for more plaudits for his responsibilities

in the M.I.T. Second Century Fund. He is serving as Major Gifts Chairman in the Greater Boston area. Our best wishes for top level results in these efforts! . . . **Guillermo Brockman**, who played a lot of soccer during his Institute years, was listed on the school records as William and was known to most of his friends as Bill. He writes a short note concerning his current activities and apparently now gets a good deal of exercise in his real estate and subdivision work. He says: "I have given up my former activities in the construction field," and also advises that, "In the subdivision field, I handle every phase of the business, that is, financing, construction, selling, administration, etc." He has new offices at Pavo 112, Guadalajara, Mexico.

The interesting details of **Henri Gaudfrey's** career are well reported in our 1959 Reunion Book. Upon recent urging he wrote some personal reflections regarding his professional work as dean of Engineering, Ecole Polytechnique in Montreal. While acknowledging that he hadn't planned to enter the educational field, he says, "I am very happy in my responsibilities as an educator. It does a lot of good, even physically, to be with young men all the time. At my age, I think that I can adopt and therefore understand the views of the young generation and I boast about not getting older as fast as I should. Whoever guesses my age is always below mark. I am glad still to have all my hair and not a white one among them. I hope that this will continue." In addition to two bachelor's degrees, he has been awarded Honorary Doctor of Science degrees from three Canadian universities. . . . **Turner Gilman** came back last summer from a three-year assignment as Supply Division Chief with the Seventh Army in Stuttgart, Germany. He was promoted from Lt. Colonel to Colonel and in September assumed a command in Chicago, Ill. In a recent letter he says, "Present assignment as commanding officer of Midwestern Regional Office, U.S. Army Signal Supply Agency, is very interesting. I am, in many ways, in same status I was in 1940 as a procurement officer. We have responsibility for activities such as quality assurance, in 20 midwestern states, and procurement responsibility for assigned commodity codes of communication and electronic apparatus and other items also as assigned. Complicated, but we buy what we're told to buy and the ways by which decisions as to items are made are also complicated. We brought back with us from Europe some 250 plus clocks and about 40 music boxes; only representative samples followed us to Chicago. If the Secretary of the Army will permit, I will retire voluntarily on 30 June, 1961 to my place in Hanover, Mass. I hope to find some appropriate occupation which will provide capital to buy more clocks and music boxes, but will be content to relax and enjoy the benefits of military retirement and to repair clocks for myself and perhaps for others."—**G. K. Crosby**, Secretary, Longwood Road, Huntington, W. Va.; **H. E. Thayer**, Secretary, 415 W. Jackson Road, Webster Groves 19, Mo.; **M. S. Stevens**,

Secretary, Patent Section, Room 20B-131, M.I.T., Cambridge 39, Mass.; **J. P. Eder**, Secretary, 1 Lockwood Road, Riverside, Conn.

'35

District Secretary, **Louis W. Pflanz, Jr.**, (Bud) writes from the sparsely settled (by '35ers) Southwest a newsy, interesting letter which I felt you should read in its entirety. Here it is and many thanks, Bud: "In the Class Notes I receive, I note with envy that many of the old characters have children who have children, whereas all of mine are just out of or still in diapers just like the Jack Orchard stage. Being a regular army officer, and a full colonel (mostly scotch) has its up and downs. As you know, at many military installations, government quarters are furnished. At some you live like a king while at others you live just like the folks on the wrong side of the tracks. In one house we had 18-ft. high ceilings while others were so low I could change the burned-out ceiling lights without even standing on tiptoe. (Wives like these ups and downs especially when it comes to window drapes.) I am of the opinion that most government quarters are designed, approved, and built by a special breed who hate the military! My present abode is a good example. A door bell or a door knocker or even ceiling fixtures aren't even authorized. To get in, just yell! Then again there was that 102-year-old homestead at Ft. Leavenworth that was steeped (and dipped) in tradition and short on conveniences. We could show you where Custer's spurs roweled the wooden steps, but were hard pressed to show you a bathroom possessing modern conveniences. My three children were all born at Army installations: Nancy at Heidelberg, Germany, where we spent a four-year tour; Pamela at Ft. Leavenworth, Kansas, another four-year tour; David at Ft. Lewis, Wash., a two-year tour. Speaking of Ft. Lewis, if any of your lads (sic) up Tacoma 99 way see a Lakewood postal employee wearing one of our class rings, please ask him to return my family heirloom cameo ring, a Pallas Athena white head on black onyx. My wife mailed both rings to me when I was in Korea in 1958 and they never got past the local post office. I have a new class ring, so let him keep the old one. All I want is the cameo, so only punch him once in the nose. . . . Just how does a professional communicator become the Director of Research for the Defense Atomic Support Agency's Field Command (DASA-Daysah on the Mesa)? It ain't easy. So rather than bore you, let me answer Allan Q's query as to what said duties and responsibilities are. Naturally, one cannot even do anything in thought, word, or deed without the Atomic Energy Commission, hence, we maintain close liaison with the two scientific laboratories (Los Alamos and Lawrence) and provide guidance to the AEC and its contractors to insure timely and appropriate development of the nuclear portion of weapons. To accomplish this

and other unsaid functions, we have scientific military types possessing master's and doctor's degrees in the nuclear sciences, physics, mathematics and electronics. We are a joint type of organization, hence have Army, Navy, Air Force and Marine officers as subordinates and superiors. So you all, in this here business, come and see us. Until then, keep the faith."

Regional Secretary **Hal Bemis** wrote **Clark Nichols** congratulating him on his new assignment at Leeds & Northrup. Clark responded with the following news to add to that which appeared in the January Notes: "There is little of major interest to report other than that I'm in pretty deep in Little League with my two younger boys. I am assistant manager of one of the major league teams here in Oreland on which both of them play. The Oreland All-Star team was very successful last year, being finally eliminated by Levittown which won the national title. The community interest sparked by this success was most amazing and gratifying. Our family recently acquired a camp on the shore in my old home town in Maine where our boating activity is a serious business. The largest craft in our little fleet is an 18-foot sloop which we sail in Jersey waters as well as Penobscot Bay in Maine. We have trailed this boat over 15,000 miles in the last ten years! The boys haven't started to worry much about college although I have. Two of them feel they want to be engineers, and since few technical schools offer athletic scholarships, I guess the old man will have to work a while longer."

District Secretary **Mort Jenkins** advises that **Billy Bates** is helping him contact the Western Pennsylvania classmates and that they should have a preliminary report soon. So watch for next month's notes for the details. . . . District Secretary **Art Haskins** is batting 1.000 so far on his requests for news. Many thanks to both John L. Fuller and Dexter J. Clough, 2nd for bringing us all up-to-date. Here are their letters: **John Fuller** writes: "As you probably know, I received only my graduate degree at M.I.T. Hence, I never became as well acquainted with the student body as one does when he goes through his undergraduate years. However, I'll try to contribute some news for you since I sympathize with anyone in your position. Currently, I am senior staff scientist and assistant director for training at the Roscoe B. Jackson Memorial Laboratory. I do research in psychopharmacology and administer training programs for everyone from talented high school students to post-doctoral fellows in biology. With my wife, Ruth, I occupy a 135-year-old farmhouse on a hill overlooking Frenchmans Bay, Mass. Daughter, Sally, will graduate from Radcliffe this year. I'm not much of a golfer but I get the same effect from splitting wood, gleaned from our four acre 'estate.' Yes, I have written a book with Prof. W. R. Thompson of Wesleyan, entitled *Behavior Genetics*, published by Wiley. It's the first book length treatment of this field, but I don't expect to get rich from it."

Dexter J. Clough, 2nd, M.D., now lives in Bucksport, Maine, and writes:

"After graduating in Course VII, this alumnus applied himself the next four years in medical school at the University of Pennsylvania. In the summer between his third and fourth years he served as a hospital laboratory technician, thinking the better of the job because it paid \$40 a month, plus maintenance, compared with pay to the interns at the same hospital of \$25 per month, plus maintenance (such intern's pay being in line with the current stipend at that time as compared with the modern intern's pay averaging about \$125 per month, plus provision of an apartment for wife and children by some hospitals—a bonus practically unheard of before World War II). After receiving his M.D. in 1939 and training in a general internship for a year and a half, he acquired a two-year residency at the Memphis Eye, Ear, Nose and Throat Hospital, following which he has practiced in Bangor, in eye, ear, nose and throat until 1946 and in ophthalmology alone since then. Classified 4F because of otosclerosis he had no war-time service other than the examining of draftees. In November of 1948 he was certified as a diplomate of the American Board of Ophthalmology, and in a three-week refresher course prior to the examination for this, at Washington University in St. Louis, he was happily surprised to find, and hospitably received into the family of, his classmate in Course VII and genial friend, **Ralph Woolf**, then a resident in obstetrics and gynecology at Barnes Hospital at Washington University and now a professor in the same specialty at the same university. In 1943 Dexter married Ellen Frances Palmer, a nurse and science instructor at St. Luke's Hospital in Chicago. Until six years ago, their home was in Bangor, and since then, it has been on a tidewater farm on the Penobscot River in Bucksport with Dexter commuting in a DKW the 16.5 miles each way daily to and from his hospital and office work in Bangor. They have three children, Peter in his first year at Phillips Exeter, David in the sixth grade and a right end on his Pop Warner league team, and daughter Frances in fourth grade. At times the family skis at Sugarloaf, Dexter in particular finding the sport good mental hygiene, for no one can keep his mind on his worries while skiing. (But perhaps his writing his memoirs in the third person might indicate he would do better to retain a psychiatrist.) For 14 years Dexter served as a supervising ophthalmologist for the Aid to the Blind program of the Division of Public Assistance, in addition to his full-time private practice, and consulting ophthalmologist for the Division of Services for the Blind in the State of Maine Department of Health and Welfare. Besides his local, state, and national medical societies, he is a member of the New England Ophthalmological Society, which brings him to Boston two or three times a year, the American Academy of Ophthalmology and Otolaryngology, and the Pan-American Association of Ophthalmology. For the past five years he has served as an honorary secretary to the Educational Council of M.I.T. This involves interviewing applicants for M.I.T. in his region,

and he wishes to report that the experience it has afforded him in meeting with bright young men and in re-acquaintance with the Institute is most enjoyable."

I think it is time that your Class Secretary expressed publicly his most sincere thanks for the wonderful cooperation he is receiving from the Secretariat in particular and his classmates generally. Your letters are a tremendous source of pleasure and delight. It's hard to believe, but our class notes have occupied a full page in the Review for each of the last five months and I see no end in sight. I already have more than enough for the next issue, but that doesn't mean to hold up. Keep it coming. We will do something about sending out a special newsletter this summer. . . . Telephone, write or call on your nearest secretary, now: **Edward C. Edgar**, Kerry Lane, Chappaqua, N. Y.; **Hal L. Bemis**, 510 Avonwood Road, Haverford, Pa.; **Elmer D. Szantay**, 6130 North Kilbourn Avenue, Chicago 16, Ill.; and **Gerald C. Rich**, 673 Rosita Avenue, Los Altos, Calif.; Regional Secretaries.—Class Secretary, **Allan Q. Mowatt**, 11 Castle Road, Lexington 73, Mass.

'36



As mentioned before, our 25th Reunion promises to surpass our wildest expectations. The dates: Friday, June 9 through Sunday, June 11; and Alumni Day, Monday, June 12. The place: Baker House on the M.I.T. campus. A supervised program for children's activities is being planned, and separate accommodations will be available for them.

Now for some other news. . . . A clipping reports an honor which has come to **Cesar Calderon**, Course II, of San Juan, Puerto Rico. "Cesar Calderon has been named Businessman of the Year by the Puerto Rico Chamber of Commerce, it was announced by the Chamber President Ricardo Freiria. Calderon, according to Freiria, is 'one of the outstanding exponents of the principle of a balanced economic expansion in Puerto Rico,' and has contributed largely to the realization by local capital of what it can achieve by 'adapting to new realities.' He is president and main stockholder of Enterprise Hotel Development Corporation, which will build a 425-room hotel in the Condado section to be operated by the Sheraton Corporation. He will also construct at Punta Escambron a luxury hotel to be operated by Maxim's of Paris. In a record four months' time, he built the Conservatory of Music building, which he rented to the Government. In 1960, he developed an industrial park at Isla Verde, in which he has already constructed two of the 12 buildings to be located in it. He also started the organization of a life insurance company with local capital, and continued active in the presidency of Mantecados Payco, Inc. Calderon was re-elected a member and later named vice-president of the board of directors of the Government Development Bank, and was the first Puerto Rican to be named to the board of directors of the

South Puerto Rico Sugar Company, owners of the Guanica Central. He is also a resident member of the American Society of Arbitrators, and has been appointed organizer and director of the International Gold Tournament to be held in Dorado in June. He is married to Mrs. Sila Serra Calderon, and they have three children, Sila Maria, 18; Cesar, Jr., 16; and Maria Teresa 11."

Congratulations Cesar! Your letter on the Mexico and California trip never reached your scribe, so thanks for sending another copy. . . . A little late, but here is Cesar's most interesting letter: "In the summer of 1959 we took a delightful trip through Mexico. It was a complete revelation, since we found right in our midst a most modern city, as large as Chicago (four and one-half million people), conceived and designed by European standards during the time of the Emperor Maximillian and his Empress Charlotte. Thus, the city looks very much like Paris in that it has the most wonderful boulevards, traffic circles and hundreds of fountains and monuments. I do not know of any place where there is such a tremendous contrast between the very old, represented by the old Spanish churches and buildings, and the very modern, represented by the latest and very spectacular modern architecture employed in the newer buildings. The Mexicans seem to have gotten over the hump in that no longer do they feel a sense of inferiority towards Americans and foreigners, and therefore the days of 'yankee gringo,' etc., are a thing of the past. The Mexicans are an intensely proud people with a tremendous sense of dignity that enables them to entertain and serve the tourist well without extending the left hand for a tip and, figuratively speaking, keeping a knife in the right, ready to stab him in the back. The government and the political climate seems to have reached a very stable condition and it is a most inspiring sight to watch the many new industrial and commercial activities that are set up as joint ventures between Mexican and American capital and know how."

"From Mexico we went to Los Angeles and through previous correspondence, I had contacted **Brent Lowe**, with whom we spent the better part of a day in La Jolla. Brent had always intrigued me since our college days because of his dashing ways and fabulous speech. I will never forget the day he came back to the dorm and mentioned that he had been out with a 'ferocious looking blonde.' Subsequently, and through the Class Notes, I knew that he was established in La Jolla and that he had two Pontiacs in two different pastel shades, to match two of his wife's sweaters. I found Brent to be his old self and instead of two Pontiacs, he now drives a delicious looking white Cadillac with pale blue hardtop. The lady and the sweaters are no more. He told me that he is now practically retired and deals in 'special situations.' I am sure that for such a handsome bachelor with such a stunning car and corresponding bank roll, he must have many an occasion to deal with all sorts of 'special situations.' Brent was

kind enough to drive us around for quite a long while showing us all the points of interest and finally he took us to the excellent La Jolla Tennis and Swimming Club. From Los Angeles we went to Pebble Beach, where I spent five days golfing with my boy. Just imagine: this was during the last week of July, and to be able to play at all we each had to wear two long-sleeved sweaters. Back in our cottage at Del Monte Lodge, the rest of the family had to keep the fireplace going full blast. The town of Carmel near-by is a dream, since it was founded by a colony of artists and the most beautiful and quaint little stores are found there, where you can buy most of the stuff that it takes you weeks to locate in Europe.

"While at the airport waiting for the jet to bring us back to New York, who should wander by but good old **Laddie Reday**, who was not only in our class, but was in the same course with me and was an excellent personal friend. As you will recall, during the war Laddie spent most of the time as Captain of a Navy transport ship plying the dangerous South Seas. It was at this time that his best literary effort, 'Making Booze in the South Pacific,' appeared in Esquire magazine. Several medals later the war ended for Laddie, and by that time he was happily married and had a family, and inasmuch as all the G.I.'s were returning to the States, Laddie chose the opposite direction and settled in Japan where he quickly established himself in a beautiful Japanese villa, and a short while later found himself vice-president of a Japanese shipping company. The next invitation to fame came in the form of a small part played by him and his wife in the motion picture 'Teahouse of the August Moon,' which was filmed in Japan. Unfortunately, someone in the cutting room, who apparently was not at all interested in promoting Laddie's career as an actor, proceeded to eliminate Laddie's participation, and the United States theater-goers never knew what they missed. Recently, for a number of reasons too complicated for discussion, Laddie returned to the States, and he is now established at 2449 Orange Avenue, Costa Mesa, Calif., and is acting as sales manager for Service Soft Company of San Diego, makers of water softening equipment."

. . . What we need is more correspondents like Cesar, if we are to have more interesting notes. . . . See you at the Reunion!—**Jim Leary**, Secretary, Indian Harbor, Greenwich, Conn.

'37

Your secretary is back from a month in Mexico spent at Acapulco, Taxco, Cuernavaca and Mexico City. What a wonderful country. The purpose of this trip was the honeymoon of Robert H. and Rose C. Thorson (formerly Mrs. Rose C. Collins). . . . **Jim Newman** has just been named managing partner of the Eastern Region of Booz, Allen and Hamilton. Jim has been with them since 1946 and has been a partner since 1951. Prior to joining Booz, Allen and Hamilton, he served

as a research engineer for American Rolling Mill Company and as assistant to the President of Ingersoll Steel Division of Borg-Warner Corporation of Chicago. Jim is also a graduate of the University of Chicago, School of Business, where he received an M.B.A. . . . **Charlie Hammann** has recently been designated senior associate of Metcalf and Eddy. . . . **William Tucker**, Assistant to the Managing Director, Technicolor Italiana, Technicolor Corporation, has been selected as one of the 150 participants in the 39th session of the Advanced Management Program at Harvard Business School. . . . **James McCormack, Jr.**, Vice-president of M.I.T., is now a member of the Board of Trustees of Aerospace Corporation.

Horace VanDorn has been elected vice-president of the Fafnir Bearing Company, New Britain, Conn. He has been with Fafnir since graduation. Van is also a corporator of the New Britain General Hospital and the Berlin Savings Bank, a member of the M.I.T. Educational Council and a past president of the Fafnir Mutual Benefit Association. Van is married, has three children and lives at 51 Chatham Road, Kensington.

We will be seeing many of our class next month at Alumni Day. If at all possible, try to be there.—**Robert H. Thorson**, Secretary, 506 Riverside Avenue, Medford, Mass.; **Professor Curtis Powell**, Assistant Secretary, Room 5-323 M.I.T., Cambridge, Mass.; **Jerome Salny**, Assistant Secretary, Egbert Hill, Morristown, N.J.

'39

Serving currently as both a class agent and as class secretary, I took the opportunity afforded by the most recent class agents' letter to add a postscript plugging for class news at the same time that addressees responded to the suggestion to contribute to the Alumni Fund. So did Seymour Sheinkopf in his recent letter. To our pleasure—and yours—those postscripts have already borne fruit, for here are excerpts from two letters: **Henry Knippenberg, 3rd**, Course II, is president and general manager of Dresser-Ideco Company, a division of Dresser Industries, Inc., located at 875 Michigan Avenue, Columbus 15, Ohio. Knip's division builds hangers and TV towers. Perhaps some of you came across the publicity given to the world's tallest structure, a 1676-foot tall TV tower completed last summer at Cape Girardeau, Missouri. Knip writes that he has been with Dresser-Ideco since August of 1959, having joined Dresser Industries in 1956. On the home front, Knip also has done quite a fine job of family building. He has three girls and a boy, ranging from 11 years down to 16 months. . . . **Charles William Guy, XVI**, wrote from California that he is executive vice-president of North American Aviation's Rocketdyne Division, located at 6633 Canoga Avenue, Canoga Park. Rocketdyne is a major producer of large liquid propellant rocket engines and solid propellant motors. Bill leads a busy life. Currently he's regional

chairman of the Northwestern Region, Second Century Fund Major Gifts Committee. In addition to this M.I.T. activity, he is chairman of the Propulsion Section of the American Ordnance Association, and member of four other groups: American Rocket Society; American Management Association; Institute of the Aeronautical Sciences; and the West Valley Y.M.C.A. . . . Thank you both, Knip and Bill. Now let's hear from still more classmates!

Harold Seykota, XV, our former class secretary, did just that. Here's a letter dated February 28, 1961, and mailed from Santiago, Chile: "The story starts in Korea where during December 1960, I had finished my job of training an operating group and we successfully completed our performance guarantee run. In fact, during the 10-day run we made 2605 tons of urea instead of our guarantee minimum of 2500. And that's a lot of little white urea balls! . . . En route to the U.S.A. I phoned Mary and **Jim Barton**, XVI, in Seattle, where he forms part of the team which makes Boeing succeed. Also in Seattle I visited via phone with **Nils Rosenberg** '40, who is with Boeing International these days and who has been on foreign junkets this last year. . . . **Bob Fife**, XV, formerly our neighbor at Redondo Beach, Calif., has bought a motel near Santa Cruz, Calif., and he, Maisie and their happy family are now expecting visitors from the East to share with them the joys of Monterrey and the wealth of the rest of the country. . . . **Alex Laker**, I, visited us during the holidays and asked that his regards be extended. . . . **John Noyes**, '38, of St. Louis reported via phone during plane touchdown that all is well in the airplane business at MacDonnell and with his family.

"During January I had my share of the blizzards in Cincinnati, Washington, and New York until I started a tour of South America. Enjoyed seeing Lobby and Conchita at Mexico City and I am pleased to report that the altitude of Mexico City didn't bother those of us who are accustomed to dealing in rarified air. . . . At Bogota during an M.I.T. luncheon I met an alumnus who reported that **Tony Arias**, II, had left Cuba, was well and was in Florida, although his substantial holdings in Cuba have been expropriated. . . . **Cristobal Rosas**, X, at Lima, Peru, is one of the leading citizens of that country where, among other things, he owns a couple of factories at which some 3000 whales per year are converted into oils and fishmeal. . . . Continuing on south I had another wonderful meeting. This time the plane touched down at Antofagasta, Chile, which airport is mostly nothing, surrounded by sand dunes. Well, at this outpost, waiting to be rescued from being stranded by an out-of-order engine, was **Ralph Laredo** '44. I had last seen him in May, 1949, at Rio de Janeiro where I had finished building and starting up a dry ice plant and turned it over to Ralph. He was assigned by Liquid Carbonic to head up production and maintenance at the Rio plant, and some five or more other South American plants. Ralph and I

came in to Santiago together, and these last couple of days we have brought one another up to date on what happened in the last 12 years.

"On the home front of the Seykotas I am delighted to report that Hilda and the youngsters have done remarkably well in spite of the Old Man's absence. Now that the house at Redondo has been sold, we are reasonably liquid with respect to movement, and are planning to meet in Mexico or maybe Argentina soon for a couple of weeks' vacation before we return Stateside about mid-April to continue on with Vulcan, headquartering at Cincinnati. Geographically this seems to us to be a demotion, but it only confirms the old story that some guys will do almost anything to keep from working."

Seymour Sheinkopf, X, who shares with me the task of composing Alumni Fund letters and thereby writes many of you directly, is treasurer of Reliable Hardware, with two Boston suburban stores. Among Seymour and Sylvia's activities, Boy Scouting comes well up on the list. Sylvia is currently chief den mother and Seymour is cub master of Pack 2, Brookline. Two of the scouts, naturally, are Mark and Paul. And as an ex-Bostonian, I envy the Sheinkopfs their opportunity to enjoy and help support such cultural activities as the Museum of Fine Arts, the Science Museum, and Friends of Symphony. . . . **Gus Hunicke**, II, and Prilla amplified the short news item which appeared in last month's notes. The 80 Fenwood Drive address in Old Saybrook, Conn., is a temporary one, for they are expecting to buy a home there shortly. Gus went with Cramer Controls Corporation late in 1959 as director of engineering. The company is one of the portfolio companies of the American Research and Development Corporation, and the target is growth, sticking mostly to commercial instrumentation. They're breaking ground for a new plant within the next few weeks, and will bring out at least nine new products this coming year after having brought out five new ones this past year. The Hunicke's oldest youngster, as was mentioned last month, is Jim, a freshman at the Institute, going into Course II like his father. Gretchen, 17, is heading for Wellesley. And Debbie, 10, makes it a trio. Cruising is a family sport. The past couple of years, the Hunickes have enjoyed Buzzards Bay and Long Island Sound.

Dick Leghorn, VIII, made the keynote address on March 9 before the National Federation of Science Abstracting and Indexing Services meeting in Cleveland. Dick, founder and president of Itek Corporation, made the prediction in his speech that a broad new Information Industry now shaping in the nation will allow us to challenge the Soviets' closed society from a position of strength. He said: "A free flow of information is anathema to the Soviets' political system which, in contrast to the West's, bases on the secrecy of a closed society. This contrast is revealed in space, where the West is pressing forward with information satellites to provide data for weather prediction, navigation control, and mapping

purposes. The Soviets, on the other hand, have limited their efforts in an information sense to exploratory thrusts at Venus and the moon." For more on Dick Leghorn, refer back to the April issue. Also, Dick is one of many noteworthy men who participated in panel discussions at the Centennial Celebration in April. Oppenheimer, Huxley, Land, Pace, and Salk were just a few of the distinguished people on the program along with our illustrious classmate, not to mention The Right Honorable Harold Macmillan, Prime Minister of Great Britain.—**Oswald Stewart**, Secretary, 31 Birch Road, Darien, Conn.

'40

The news this month is brief. . . . **William Steber** is the inventor of patent No. 2,952,847 for a radar indicating system. . . . **Ed Hahn** has left the Woonsocket plant of U.S. Rubber and has transferred to their research center at Wayne, N.J. Ed will work on the development of Lamiflo, a thin rubber skin which, when used on the hulls of motor boats, enables them to move faster through water. At Woonsocket Ed was chief chemist in charge of the foam rubber laboratory and was later appointed production development and control manager for the entire plant.

Don't forget to contribute to the Alumni Fund to help swell our 25th Reunion Gift. As of January 31, 1961, 25 percent of the class had contributed, and the average gift was \$27.00. . . . From the low condition of your Secretary's mail, it appears that not many of you are patronizing Phelps-Walker Company, namely, Parker Pen. How about rectifying the situation?—**Alvin Gutttag**, Secretary, Cushman, Darby & Cushman, American Security Building, Washington 5, D.C.; **Dr. Samuel A. Goldblith**, Assistant Secretary, Department of Food Technology, M.I.T., Cambridge, Mass.

'41



Last call for the 20th Reunion! Early returns indicate a record attendance. Early in March, 120 had said they'll be there, with another 20 coming if humanly possible. If you haven't yet sent in your registration, do it now!

Luke Hayden, having recovered from the effects of his auto accident last summer, is picking up his share of community activities. He is serving as chairman of the real estate committee for the Association of Business and Commerce of Central Berkshire County. The committee will serve as a clearing house and liaison group for satisfying the physical requirements of any type of economic endeavor desirable to the area. Luke is also one of the two vice-chairmen of the 1961 United Fund campaign of the Pittsfield, Mass., area. As well as working with the United Community Services over the past several years, he has served as a director of the Catholic Youth Center and

of the Girls Club, as a trustee of St. Luke's Hospital, and as a member of the Kiwanis Club. Luke is president of the City Savings Bank of Pittsfield. . . . **Mal Abzug** reports that he has changed from a supervisor to a consultant at Douglas Aircraft in El Segundo, Calif. . . . **James Austin**, Associate Professor of Meteorology at M.I.T., has been re-elected secretary of the American Meteorological Society. . . . **Reid Weedon**, Vice-President of Arthur D. Little, Inc., of Cambridge, recently addressed the 43rd National Conference of the American Marketing Association.

See you at the 20th Reunion at the Bald Peak Colony Club, Lake Winnepesaukee, N. H., June 9 through 11. If you haven't yet registered, contact either of the undersigned, pronto.—**Ivor W. Collins**, Secretary, 9 Sunnyside Drive, Dalton, Mass.; **Henry Avery**, Assistant Secretary, Pittsburgh Chemical Company, Grant Building, Pittsburgh 19, Pa.

'43

Our class continues to gain prominence in industry and engineering through the promotions and continued recognition of our classmates. **John J. Hess** has been promoted to the position of engineering department head for air traffic control (Aeronautical Equipment). In this position he is responsible for study and development programs in the field of commercial air traffic control. He also retains his responsibility for the development and application of gas bearings. He joined Sperry in 1943 as an assistant project engineer assigned to the development of an electromechanical coupler for an airborne automatic approach system. Later he took part in component development for the A-12 Gyropilot R flight control. In 1946, while working on an automatic cutoff system for the A-12 equipment, he was promoted to project engineer. During 1948 he was assigned to guidance and control problems for the Regulus missile. He resumed work on gyropilot component development in 1949, and advanced to senior project engineer in 1951. In 1953, upon his promotion to engineering section head, he assumed responsibility for development of an automatic pilot for helicopters. The following year he joined the Hustler program, engaging in design of a bomb-pod control system. In May, 1957, Hess rejoined Aeronautical Equipment Division, with responsibility for fundamental study and research. He has undertaken reliability analysis and system synthesis studies and development of thin film vacuum depositing techniques. He has also headed the division's program on gas bearings for instruments. John received the M.E.E. degree in 1948, from the Polytechnic Institute of Brooklyn. He has been issued one patent and has three patent applications pending.

Charles F. Coles, Director of Business Research, United Shoe Machinery Corporation, has been selected as one of the 150 participants in the 39th session of the Advanced Management Program at the

Harvard Business School. The Program began February 19 and ends on May 19. Charley, who lives at 8 West Hill Place, Boston, received his bachelor's degree in Naval Architecture and Marine Engineering with our class. The participants in this program are nominated and sponsored by their companies and have been selected by the Admissions Board at Harvard on the basis of demonstrated ability, leadership qualities, and adaptability in their careers. The program offers a concentrated course of study in six major areas of prime interest to today's top management, and uses the case method of instruction. . . . **Dr. George F. Floyd** has been elected vice-president, systems research, of The Bissett-Berman Corporation, Los Angeles. He will be responsible for direction of company activities in development of new system concepts and related techniques. The corporation is a research and development organization engaged in systems studies and development activities in the field of information electronics. Prior to joining Bissett-Berman in July, 1960, Dr. Floyd served as a senior staff member of Ramo-Wooldridge for seven years and in a similar capacity with Hughes Aircraft from 1949 to 1953. He was at one time a research associate at M.I.T., where he received his bachelor's, master's, and doctor's degrees.

Thomas M. Bennett, manager of the Pilot Plant Construction Department of The Lummus Company of Newark, New Jersey, is head of one of the four key operating departments of the newly expanded Engineering Development Center of that organization. Tom has been with Lummus since 1946. . . . **John E. Gayton** wrote from Westport, Conn., that his new position is as an associate with Cresap, McCormick & Paget, management consultants in New York City. He also wrote that he'd like to see more of our classmates to compare their advancing age with his. In about two more years all of us will get a good look at each other at the 20th Reunion so I have advised John to be patient. . . . **Richard R. Raven** was elected president of the Bath, Maine, Area United Fund. He is assistant technical manager of the Bath Iron Works and has been a director of the Fund as well as chairman of the Budget and Admissions Committee during the past years. . . . We need about 50 more contributors to the 1961 Alumni Fund in order to bring our class up to its usual standard. If you have not already done so, kindly send your Alumni Fund checks to M.I.T. pronto.—**Richard M. Feingold**, Secretary, 10 North Main Street, West Hartford 7, Conn.; Assistant Secretaries: **Christian J. Matthew**, Arthur D. Little, Inc., 314 Battery Street, San Francisco, Calif.; **John W. McDonough, Jr.**, 413 North Miami St., Wabash, Ind.

2-'44

The first news to report is that **Sten Hammarstrom** dropped me a letter, advising that after six years in Cincinnati, he has been transferred to San Francisco in sales with Republic Flow Meter, divi-

sion of Rockwell Manufacturing. Prior to leaving Ohio, Sten rounded up notes on other members of the class, and some on members of the class of '45. Much as I'd like to include the information on the '45 men, these notes will be long enough if I just stick to 2-'44. . . . Sten had lunch with **Caleb Taft**, who had just transferred from Buffalo to Cincinnati to become manager of American Standard's plumbing and fitting plant. . . . Sten would run into **Lew Tyree** at one airport or another on Lew's rounds of checking on Hinchcliff Trucking operations. . . . About a year ago, Sten advises that he had a fine visit with **Jim Woodburn** and his family in Wheaton, Ill. Jim is handling research work for Griffin Wheel in Chicago. . . . Last September, Sten met **Dave Jealous** in Chicago, and they discussed Conover Mast operations before Dave had to make a late commuter train to Park Forest. Thanks for all the news Sten!

Just received a note from **John White** who graduated in Course XV, advising that he is opening a law office in Boston. He also advises that he is engaged to Bernadette Houston, and that plans are for the wedding to take place next summer. . . . A few weeks ago, I had dinner with **Bob** and **Dorothy Benedict** in their charming new home in Riverside, Conn. The Benedicts have a small lake on their property, and Bob has stocked it with large mouth bass. The only complaint he has is that since he put the fish in last fall no one has seen any trace of them. The three children, Mark, Christine, and Hubbard, are all looking forward to doing some fishing this summer. Bob is general manager of Phelps Dodge Copper Products International Corporation, and makes several trips a year to visit customers in Latin America and Europe. Bob runs into **Allen Porson** every so often. Allen is sales manager, Phelps Dodge Tube Division. He also travels, but limits his travel to the 50 states. . . . A note advises that **Gunther Baldauf** presented a paper at the TAPPI Annual Meeting in New York in February. The paper was entitled "Chlorine Demand of Pulps." Gunther, who received his Ph.D. degree from Tech, makes his home in Kalamazoo, Mich., where he is research manager of Allied Paper Corporation.

A note in the Westerly, R. I., Sun advises that **Jim McClelland**, who is research director for Fram Corporation, has been appointed head of the 1961 Episcopal Charities Drive for the state of Rhode Island. From the note, Jim has been very active in school committee work in addition to his work with the church. . . . The Times-Argus of Barre-Montpelier, Vt., advises that the **Bill Seales** and their two daughters have just moved to Montpelier from Dixfield, Maine. Bill has joined the staff of Heaton Hospital as a full-time anesthesiologist. . . . The mail brought in a note sent along by the Dwight Building Company of Hamden, Conn., which sheds some light on the latest activities of **Dick Maconi**. Dick has maintained his activity in the Naval Reserve, and is now sweating out his third full stripe. He also admits to a 16' out-

board boat on a trailer which has been trailed from Maine to the Florida keys. Wife Mary, and the five children all pitch in to make up the crew for captain Kidd-Maconi. Dick also is a member of the Young Presidents Club, and was contemplating a convention in Puerto Rico in May. If you need any building done around New Haven, I'm certain that the Dwight Building Company will be happy to help you out.

Received a note from Chick Kane '24, including a progress report of the Alumni Fund, 1961. For this fiscal year, 23 per cent of the 607 actives in the Class of 2-'44 had contributed \$3,130 for an average gift of \$22.00. It is interesting to note that in the national average of the alumni association as a whole, 23.5 per cent had contributed to January 31, and the average gift was \$40.70. I'm certain **Norman Sebell** would like to see our percentage contribution go up even farther than the average. The fiscal year closes June 1, so there is still time to get your check in the mail. The total of contributions to the Alumni Fund to the end of January was \$381,769. . . . The first of this month, I was at the New York M.I.T. Club in the Hotel Biltmore. I have mentioned the club rooms before in this column. Every month, a certain day is set aside for the get-together of each class. For '44 it is the fourth Wednesday of the month. This month it will be the 24th of May. Everyone from the class is welcome even if you aren't a member of the club. At the meeting in March, Gene Schnell, Tom Carmody, Bob Meany, Ed Roos and I made up the quintet representing the class. If you are in the big city on the fourth Wednesday of the month, why don't you plan to stop and join the group? Believe me, it was quite a newsworthy session, including information on some hot tips on the stock market, information on members of the class who had been seen recently, to be reported next month, and an invitation for a tour of the Union Carbide Building which is one of the real showpieces of architecture of the New York skyline. You are really missing something if you don't make an effort to join us.

One last parting note, and that is that there has been a fair amount of interest brought up by a number of the fellows that I have spoken to in favor of joining the two 1944 classes, and eliminating the prefix numerals 2 and 10. I'd appreciate some of your comments, as I believe the plan has some merit when studied from a number of approaches which I shall try to outline in my next column. See you next month.—**Paul M. Heilman**, Secretary, Reflectone Electronics, West Main Street, Stamford, Conn.

10-'44

Over the months since the last set of these notes appeared a very considerable stack of address changes has accumulated. Many of them are, of course, purely local changes, as family and income expansions call for larger quarters. But there is still a substantial amount of geographic

mobility among our group. For example: **Ryder Amthor** from Palos Park, Ill., to Manitowoc, Wis.; **James Angell** from Huntingdon Valley, Pa., to Menlo Park, Calif.; **Robert Ayling** from Syracuse, N.Y., to Stanton, W. Va.; **Richard Carter** from Chicago to Troy, N.Y. (Department of Management Engineering at Rensselaer); **King Cayce** from Lakewood, Ohio, to New York City; **Clyde Conover** from Albuquerque, N.M., to Washington, D.C.; **Joseph Davidoff** from Montreal to Chicago; **Bernard Duffy** from Kansas City, Kansas, to Winnetka, Ill.; **Harlow Farmer** from Woods Hole, Mass, to Seattle (the University of Washington, Department of Oceanography); **John Granlund** from Arlington, Mass., to Short Hills, N.J. (International Telephone and Telegraph Company labs); **Roderick Harris**, USN, from San Francisco to Chevy Chase, Md.; **Gilbert Krullee** from Cleveland to Evanston, Ill. (The Technological Institute, Northwestern University); **Frank Laurenzano**, USN, from sea duty in the Pacific to Portsmouth, N.H.; **John Matthews**, from Falcon, Venezuela, to Chatham, N.J.; **Dewey Nelson** from Buffalo to New York City; **Peter Quattrochi** from West Hartford, Conn., to Warwick, R.I.; **John LaRochelle** from Chicopee Falls, Mass., to Deer Park, Ill. (Shell Chemical Company); **David Rock** from Pitman, N.J., to Quillota, Chile; **Douglas Russell** from West Vancouver, B.C., to Triburon, Calif.; **Robert Speckmann** from Flagstaff, Ariz., to Zionsville, Ind.; **John Stevens** from Dallas, Texas, to Lynnfield, Mass.; **Hobart Swan** from Swarthmore, Pa., to Everett, Wash.; **Jack Uretsky** from Berkeley, Calif., to Lafayette, Ind. (Purdue University Physics Department); **Albert Van Rennes** from Birmingham, Mich., to Cambridge, Mass. (United Research, Inc.).

I have also been among those on the move, first from Marblehead, Mass., to Philadelphia (Wharton School, University of Pennsylvania), and last summer from Philadelphia to Pittsburgh (Department of Graphic Arts and the Graduate School of Industrial Administration, Carnegie Institute of Technology). . . . The names of **Joseph Amrhein**, **John Embree**, **Jack Frailey** and **Hugh Taft** are among those found in news clippings over the past months. . . . Joe, Chairman of the Department of Business Administration and Economics at St. Michael's College in Burlington, Vt., has also become associated with W. E. Hutton and company, investment brokers, as a representative in Burlington. . . . John has organized the Embree Electronics Corporation, West Hartford, Conn., to manufacture computer components for the electronic control of machinery and processes. . . . Jack has recently become executive assistant to the general manager of the Information Technology Center, Itek Corporation, Waltham, Mass. He was previously manager of missiles systems, Missile Electronics and Control Division, R.C.A. . . . Hugh has become president of the newly-formed Vermont Research Corporation, Springfield, Vt., organized to develop and manufacture magnetic drums and similar equipment for sale and to the data pro-

cessing industry.—**Kenneth Scheid**, Secretary, Carnegie Institute of Technology, Schenley Park, Pittsburgh 13, Pa.

'46



Cash on the barrelhead has already (early March) been received for reunion registration from Seward Kennedy, Bill Shield, Roger Sonnabend, Jim Craig, George Ley, Don Shelton, Ned Tebbetts, Bob Nelson, A. R. Krenkel, Henry Ward, Ed Richardson, Ken Davis and the writer, with Bob White, Dave Black, Bill McGrath, Bill Casey, Don Burke and Rich Adler very probable additions. If you have not yet sent your \$20 registration fee with your request for Snow Inn accommodations for June 9 through 11, do so immediately to **Jim Craig**, Hotel Corporation of America, 464 Commonwealth Avenue, Boston 15, Mass.

William E. Vannah, former chief editor of Control Engineering, has been appointed associate for advanced engineering of the Foxboro Company. Bill will provide engineering and market guidance for advanced products and systems for Foxboro and will also serve as consulting editor for Control Engineering. . . . Dr. **Thomas F. Malone**, director of research for Travelers Insurance Company, Hartford, Conn., has been elected president of the American Geophysical Union, the U. S. National Committee of the International Union of Geodesy and Geophysics. . . . **Gilbert B. Devey** has been appointed general manager of Vectrol Engineering, Inc., Stamford, Conn., a division of Sprague Electric Co. Gilbert joined Sprague in 1953 as a product specialist in the field engineering department, coming from the Office of Naval Research in Washington, where he was an electronic scientist engaged in undersea warfare studies. He was named product manager of the Special Products Division of Sprague when it was founded in 1958 and later became marketing manager.

Melvin B. Zisfein is chief of Bell Aircraft Corporation's Aeroelasticity Section, and makes his home at 669 North Forest Road, Williamsville 21, N. Y. . . . **William S. Coleman, Jr.**, is a senior liaison engineer with General Motors Research Labs in Warren, Mich. His work includes stress analysis, fatigue analysis and component studies, and he is active in the S.A.E., S.E.S.A., and I.M.S., and in 1955 he received the Engineering Society of Detroit's "Young Engineer of the Year" award. Bill has three children and lives at 2140 Charnwood Drive, Birmingham, Mich. . . . **Alan D. Barringer** is an architect and makes his home at 26 St. Peter's Road, Cirencester, Gloucestershire, England. . . . **Robert F. Hoffman** is assistant manager of Foundries for Worthington Corporation, Harrison, N. J., and is secretary of the Metropolitan Chapter of the American Foundrymen's Society. The Hoffmans have four sons and live at 18 West Lane, Madison, N. J. . . . **Alan R. Gruber** is director of Nuclear Systems Division, The Marquardt Corporation, Van Nuys, Calif. He has

three children and lives at 5831 Jed Smith Road, Calabasas, Calif.

Majed A. Akel is a partner in Woodward, Akel and Bell, architectural engineers, with offices in Norfolk, Jacksonville, and Denver. . . . **Clarence W. Nordin** is a structural engineer with the U. S. Army Corps of Engineers, 1519 South Alaskan Way, Seattle 4, Wash.

. . . **W. Henry Tucker** is associate professor of Chemical Engineering, Purdue University. . . . **J. Graham McQuarrie** is superintendent of technical services for Monsanto Chemical Co., Texas City, Texas. . . . **Morton Goldfarb** is assistant urologist at the Meadowbrook County Hospital, and makes his home at 105 Grover Avenue, Massapequa Park, N. Y.

. . . **Hugo A. Guarda** is Superintendent Engineer for the Chilean Line, Inc., in charge of repairs and maintenance of the fleet. He is married, has two sons and makes his home at 9534 Ft. Hamilton Parkway, Brooklyn 9, N. Y. . . . **William S. Gale** is chief engineer of the Gillette Safety Razor Company, Boston.

. . . **Radley H. Daly** is Assistant Director of Purchasing for Pepperidge Farm, Inc., Norwalk, Conn. . . . Don't forget to sign up for the reunion.—**John A. Maynard**, Secretary, 15 Cabot Street, Winchester, Mass.

'48

During a recent trip to Cambridge, I had an opportunity to chat with **Bob Stern**, Course X, and to learn of some of his activities appropriate for publication in these notes. After five years with Arthur D. Little in San Francisco, Bob returned to Cambridge in 1959 to serve as development director for Bolt, Beranek and Newman, Inc. Among other things, he brought with him his wife, Jinny (Stanford '55), and his son, Adam. Amy was added to the family in July, 1960. They are now all busily renovating an overgrown wool-merchant's estate in Lexington. At BBN, Bob is charged with the commercial development of its inventions in such fields as acoustics, building materials, vibration control, bio-medical systems, and computer technology. Since his return from California, New England weather has forced Bob to give up some of his hobbies, including seaplane flying, "good" skiing, and tentless camping. He over-compensates for these losses by shoveling snow.

The following memorandum from the Class Notes Editor will clarify a possible source of confusion: "I have just had a call from David Moore '49, who was upset to read that **John C. Adams, Jr.** '48, had died, according to our Deceased list. He phoned John C. Adams, Jr. '48, this morning and found him very much alive. Further checking has revealed that the man who did, indeed, die, was one of two men of almost exactly the same name. The deceased Mr. John Curtis Adams, Jr. (the other is John Cecil), apparently did not stay at M.I.T. very long, as our records do not show a course number." We hope this note will help eliminate any confusion which may exist. . . . A brief

progress report on class contributions to the 1961 Alumni Fund may be of interest. Up to February 1, 377 members of our class (compared with 407 last year at the same time) contributed an average of \$17.20 (compared with \$16.70 last year).

Dr. Hatten S. Yoder, Jr., currently with the Geophysical Laboratory of the Carnegie Institution in Washington was elected president of the American Geophysical Union's Section of Volcanology, Geochemistry, and Petrology. The significance of Hatten's work, and the work of his colleagues, tends to lack general recognition and appreciation. For example, volcanology, the science of volcanoes, provides one of our principal windows to the earth's interior. Yet, in contrast to the resources expended on the exploration of outer space, the efforts to learn more of the earth's interior are meager; in fact, we do not even know the origin of volcanic heat. (This might be a "devil" of a problem.) . . . **Arthur J. Renz** recently announced the formation of New Hampshire Industries, Inc., in Hanover. The company will design, produce, and market mechanical industrial and consumer products. . . . Another '48er, **Benjamin Kessel**, who launched his firm, Computer Control Company, in 1952, reports gratifying progress with 255 employees, 1960 gross sales of \$3 million, and plants in Framingham, Los Angeles, and Peterborough, N.H. The firm manufactures special-purpose computer systems and modules, including a computer for the Echo Balloon Satellite project. . . . **Philip R. Marsilius**, executive vice-president and sales manager of Product Machine Company, was among the group of business executives who left for Australia in February on a trade mission for the U.S. Department of Commerce. The purpose of the mission is to promote better trade relations between the U.S. and Australia during the course of the seven-week visit.—**Herbert S. Kindler**, Assistant Secretary, 128 Elatan Drive, Pittsburgh 16, Pa.; **Richard H. Harris**, Secretary, 26 South Street, Grafton, Mass.

'49

Thomas W. Zebley (S.B. Course VI) has been promoted to the newly created position of manager of information systems operation of the ordnance department of the General Electric Company. Initially, he will be heading up a 13-man team for a three-month project to "delineate more precisely the department's information needs and evolve plans for implementation." Tom joined GE's engineering laboratory in 1949 after graduation. Before moving to Pittsfield last fall, he was with GE's engineering services in New York. . . . In a February release from the Vitro Corporation of America, we learn that the work Vitro has been doing on the first nine Polaris-carrying submarines is being continued under the direction of **Harold E. Williamson**, a former submarine officer and graduate of the Naval Academy. He was a representative for Vitro aboard the George Washington

for the initial underwater Polaris firings off the Florida coast last July. . . . The Advanced Development Laboratories, Inc., was founded recently in Nashua, N. H., by a group who left Sanders Associates, Inc., to strike out on their own. Among the founders is treasurer, **Alfred J. Cann** (S.B., M.S. Course VI).

That's all the mail bag has disgorged this month. At a meeting at the M.I.T. Faculty Club on February 27 to discuss plans for a class reunion dinner in connection with the Second Century convocation, the class officers and members available promised to assist your secretary in gathering news by preparing some biographical sketches on class members with particularly interesting or unusual occupations or private lives. **Wally Row** promised to lead off with a write-up of **Ed Kerwin** (S.B., Ph.D. Course VI A). . . . See you next month.—**Frank T. Hulswit**, Secretary, 14 Nadine Rd., Saxonville, Mass.

'51



An interesting article in a recent issue of the *Gazzetta del Massachusetts* tells of **Glen Eichenseer's** work as engineering vice-president of Automatic Merchandising Corporation. Glenn has been with Automatic Merchandising since shortly after the company was founded. He has helped to bring the firm from a very small beginning to the multi-million dollar vending machine and food service that it is today. . . . A note in *The Hartford Courant* mentions a talk by **Francis Fanelli** at a dinner meeting of the Hartford Jaycees. Frank is supervisor of the systems engineering group at Electric Boat Company, where he is responsible for development of electro-mechanical and electro-hydraulic servos and related aspects of complex control systems. . . . **James McKenna** has received a Ph.D. in mathematics from Princeton. . . . **Forest Monkman**, now vice-president for research and engineering at the Walworth Company, is a current candidate for the school committee in Revere. . . . **Al Newcombe** is living in Wayland, Mass., and is now a father of three. . . . **Bob Nickerson** is in Plainfield, N.J., working as application engineer at Daystrom. Bob and his wife Nancy have one son, David. . . . **Roy Niemela** is teaching at the college of business administration at the University of Florida, where he has been since the fall of 1957. Roy and Corinne also have a son, Van. . . . **Bob Norton**, still in Pampa, Texas, now records a total of four offspring, Christopher, Michelle, Russell and David.

Bill O'Connell is with IBM in Andover. He and Maureen have two children, Mary Elizabeth and William John. . . . **Rai Okamoto** is working in San Francisco. As of last year, when we got a card from him, he was splitting his time between a residential design in Long Island and the Golden Gateway Redevelopment Project in San Francisco. . . . **John O'Neill** is research supervisor at the Mylar Research and Development Lab of DuPont in Circleville, Ohio. Prior to his transfer to Ohio, early last year, John

held a similar position at the Yerkes Research Lab in Buffalo. He and Peggy have three children, Kevin, Kathleen and Brian. . . . **Arthur Orenberg** is living in Lexington and working at the National Company in Malden. His work at National is concerned with the development of Atomichron, an atomic frequency standard. Art and Annabelle have three children, Ellen Ruth, Joan Robin and Robert Scott. . . . **Gene Oster** is doing applied research at General Electric in Lynn and attending graduate school at the Institute. . . . **Dick Packard**, after teaching for a while at Northeastern, is now with Clevite Transistor Products as a development engineer. He and Lola and their son and daughter live in Wakefield, Mass. . . . **Archie Padis** has been promoted to commander and is serving as engineering officer aboard the USS Yorktown. . . . **John Paige** is senior group leader in charge of synthetic rubber product and process development at the Naugatuck Chemical Division of U.S. Rubber Company. John and Dorothy have their home in Naugatuck and have three daughters, Mary, Nadia and Cynthia.

Al Parr is in Valhalla, N. Y., where he was one of the founders of Power-Tronic Systems, Inc., specializing in autocontrol components and sub-systems. . . . **John Pasieka**, gives as a highlight of his recent activities that he is "aging steadily," and is living in South Acton. John and his wife Patricia have one son, John, Jr. . . . **Tony Pate** is group supervisor of the digital computer section at Bell Aircraft in Buffalo. . . . **Marc Pearlman** is guiding his construction firm, Sterling Engineering and Construction Company, through its fifth year. He and Elenor have three boys and are living in Pawtucket. . . . **Norm Peterson** is a research associate at Brooklyn Polytechnic and is writing a laboratory manual for physical chemistry. Norm, Maxine, and their two sons are living in Brooklyn. . . . **Bill Pinkham** reports that his family (Sybil, Cindy and Billy) have a new home 12 miles outside Washington, D.C. . . . **Bill Plouffe**, after spending several years with A. D. Little and Raytheon, has for the last two years been with Atkins and Merrill in Sudbury. Bill is a director and treasurer of the firm, which specializes in industrial scale models. . . . **Gordon Potter** is a partner in the firm of Potter and Potter, Architects, of Honolulu. Gordon and Jeanne have four children, Michelle, Richard, John and Suzanne.

Morton Prince has been appointed general manager of the semiconductor division of Hoffman Electronics. He and his wife Blanche and their daughter Judith Ann live in Altadena. . . . **Willard Prince** spent the winter of 1959-60 in Stockholm, Sweden, working in an architect's office, and travelled in Europe with his family before returning to the U.S. last July. He and Elizabeth and Sarah and Jeffrey now are living in Rome, N.Y. . . . **Fred Radcliffe** is a partner in the firm of Radcliffe and Ross, Civil Engineers and Surveyors, in Ivoryton, Conn. Fred and Jeanne have two children, Kathryn and Fred, Jr. . . . **Ken Rathbun** left Experiment, Inc., of Richmond, Va., in

September of 1957 to become associate professor in the mechanical engineering department at the University of Texas. Ken is developing the new jet propulsion laboratory at Texas. He and his wife Kitty have two sons, Larry and Randy. . . . **Guy Redmond**, also in Texas, is with Chance Vought Aircraft in Dallas. . . . **Don Reed** is working as engineering geologist with Haley and Aldrich of Cambridge, Mass. . . . **Olaf Remmler** is working at the radio communications and systems division of the National Bureau of Standards at Boulder, Colorado. . . . **Ed Richards** is with Monsanto, as manager of marketing research for the inorganic division, since leaving U.S. Steel in 1959. Ed and Nancy live in St. Louis and have two boys and two girls. . . . **John Richardson** has been transferred back to the Tonawanda Lab of the Linde Company. He and Lois and their two daughters have a new home in Williamsville, N.Y.

Jim Robinson is technical chief supervisor with DuPont in Whitehall, Mich. Jim and Evelyn have three children, Bradford, Leslye and Regan. . . . **Ed Rolfe** is manager of the physics department at Raytheon in Wayland. He and his wife Stephanie have one daughter, Wendy Hazel, and live in Lincoln, Mass. . . . **Gerald Rose**, now an attorney with the patent law department of the Standard Oil Company, has recently received the degree of Master of Patent Laws from the John Marshall Law School in Chicago. . . . **Paul Rothery** is directing metallurgical failure analysis and process development activities at Hamilton Standard. Paul and his wife, Jan, and daughter, Jill, live in Suffield, Conn., and have recently become active in the Appalachian Mountain Club. . . . **Steve Chamberlin** is supervisor of J-93 turbine design at General Electric's jet engine department in Cincinnati. Steve and Jean have two daughters, Jean and Carol, and live in Loveland, Ohio. . . . **Bill Ward** recently joined the International Nickel Company's Los Angeles Field Division. . . . **Bob Wedan**, as of last summer, was in St. Petersburg, Fla., working on the "Centaur" inertial guidance system for Minneapolis Honeywell. . . . A card from **John Weeks** says that he is "mostly in the technical writing and publishing game; otherwise see above." "Above" are listed five children: John, Mary, Steve, Kate and Webb. . . . **Louis Weinberg**, besides being a father of two, a fellow in IRE, fellow in AAAS, U.S. representative to the URSI General Assembly, and president of the Hughes Aircraft Company branch of the Research Society of America, is finishing a book on "Network Analysis and Synthesis." Louis and Isabella are living in Los Angeles and were expecting their third child shortly after we last heard from them. . . . **Fred Weitz** writes from Des Moines that he and Emily and Alice have just moved into a new home, next door to **Greg Gentleman**.

Walt Wells earned his Ph.D. at the Institute last year. Walt is married and has two children. He lives in Lexington and is working at Lincoln Lab. . . . **Bob White**, designing submarines, is in Ston-

ington, Conn. Bob and Eleanor have three children, Jocelyn, Robert and Julie. . . . **Mal Whitlock** is in Media, Pa. He and Mil have two daughters, and Bob lists among his recent accomplishments election to the presidency of the local PTA and breaking 90 on the golf course. . . . **Dex Whittinghill** is staff manager and methods engineer with Campbell Soup. He says that he is taking up golf, dropping ice hockey and softball, holding on to tennis, is loaded down with household repairs and remodeling, and occasionally finds time for HO trains. Dex and Norma and their two sons live in Moorestown, N.J. . . . **Dr. Bernard Widrow** has recently joined the faculty at Stanford as assistant professor of electrical engineering. He and Ronna and Leslie Ann live in Menlo Park. . . . Across the continent, **Tony Winfisky**, who also has a daughter named Leslie Ann, plus two sons named Paul and Jonathan, is professor of fine arts at Salem Teachers College in Salem, Mass. . . . **Bill Wintz** is teaching sanitary engineering and higher surveying at L.S.U. Bill and Mary have a considerable roster of children: Al, Anne, Rikki, Cathie, Nancie, Bert and Sherri.

Herb Woodson is still with the EE department at the Institute. Herb and Blanche have two sons, Bill and Bob. . . . **Bob Woolworth** mentions two trips to Turkey for foundation investigations for a refinery. Bob and Sylvia have a son, Bob Jr., and a daughter, Vicki. . . . **Gordon Van Wylen**, who is now chairman of the mechanical engineering department at the University of Michigan, has recently published an undergraduate text in thermodynamics. Gordon and Margaret have four children, Elizabeth, Stephen, Ruth and David. . . . **Victor Yancey** has joined the aero-space division at Boeing in Seattle, after eight years with Wright Air Development Center in Ohio. . . . **Earl Yates**, now a commander and father of five, is commanding officer of heavy attack squadron nine. As of last summer, Earl had orders to the Air War College at Maxwell AFB, in Alabama. . . . This is the last call for any undecided members of the class who still do not know whether they will attend the reunion. Please come if you can. We are looking forward to seeing you.—**Richard W. Willard**, Secretary, Box 105, Littleton, Mass.; **Robert S. Gooch**, Assistant Secretary, 407 Danciger Building, Fort Worth 2, Texas.

'52

No notes this month, but don't forget the cocktail party at the Faculty Club on June 9, 1961. . . . Details next issue.—**Dana M. Ferguson**, Secretary, 242 Great Road, Acton, Mass.

'53

Very brief notes . . . am fully "snowed." A progress report on the 1961 Alumni Fund came in. Good ole '53

didn't look too bad (just about average in terms of percentage of class contributing, and the average contribution looked reasonable). However, I do hope that everyone will continue giving till it hurts. You see, our salaries here at Tech are awfully low! Besides, many of us have been hoping for some time that we would be given a jazzy new office.

See **Merrill Ebner** rather frequently on the bus. He finished his doctorate here at M.I.T., then "gracefully" fulfilled his two-year contract with the Air Force (with a commission in sunny California). Is now a research engineer with the M.I.T. Metallurgy Lab, investigating high strength steels. . . . **Norm Gardner** took the big plunge and recently formed a new metalworking company here in Boston—Metalonics Corporation. The company, of which Norm is president, will center initial operations about the extrusion of high performance and clad metals in the form of rod and special shapes. Tubing is expected to be added at a later date. Further, they are seeking to meet the need for a more rapid translation of new materials and design ideas into commercial products, making them available in production lots. . . . **Kenneth Fettig** ('53-G) gave up the single life in mid-February, and married Virginia MacLellan. After a spin around Mont Tremblant, they returned to Dallas, Texas. . . . If you get a chance, drop by or send me a line on your whereabouts. It's springlike here in Boston. Here's hoping that it's likewise wherever you are.—**Martin Wohl**, Secretary, Room 1-131, M.I.T., Cambridge, Mass.

'54

These notes will be brief this month. Apparently, members of the class have been trying to recover from our hard winter, and haven't found time to let us know how they survived. We hope that all of you are now able to drop us a note or a postal card, and will do so. More gossip means longer columns. . . . A letter did arrive this past month from one of our most regular correspondents, **Jim Athan**. Jim verifies the item we mentioned a month or two ago concerning his appointment as an Educational Counselor for Tech. He says that he, his wife Kay, and the five small Athans would certainly welcome visiting members of the class down in Tampa, Fla. He would also like to hear from some of his fellow architects. His address is 2622 Hillsboro Plaza, Tampa 3, Fla.

A few other items have arrived from sundry sources. **Bill Zoino** was married to Ann Louise Westman in Brockton, Mass., on January 28. Bill and his wife are currently living in Farmington, N. M., where he is building a dam for his employers, Ebasco Engineering Services, Inc., of New York. . . . **Dave Wones** has been elected secretary of the Section of Volcanology, Geochemistry, and Petrology of the American Geophysical Union. Dave works for the U. S. Geological Survey in Washington, D. C. . . . **Otto Sellinger** has acquired his M.D., and has returned

to New Orleans after a stay in Louvain, Belgium. . . . **George Schwenk** has forsaken the academic life in Michigan for the Government Service life in Massachusetts. He is now running a Data Processing Division at Fort Devens, Mass. . . . And that's it. How about letting us know what you're doing?—**Edwin G. Eigel, Jr.**, Secretary, 321 North Thomas Street, Arlington 3, Va.

'56



Here I am taking time out from another joy-filled month of burning the midnight oil. I can not remember so many study hours even with those monstrous lab reports. . . . A short review on progress on the reunion: In March the committee met at the Faculty Club and formed subcommittees for the program, the banquet, and registration. Added to the list of committee members are Robert McGillicuddy and John Gignac. By this time you should have received all the final details. Last minute questions will be answered by return mail. Be sure to return the questionnaire now. . . . Sample of the response to our list of intended attendees is a comment from **Dan Wolfson** that he has decided to come see some of those "characters." Dan is with the Tishman Research Corporation in New York.

In a recent letter **Dexter Wheeler** informs us that he has become engaged to Sara May Burdett of Woburn. Dexter is a senior engineer on the Technical Staff of National Company in Malden. . . . **Roger Borovoy** has written that, after finishing at Harvard Law and spending six months in the Army, he and Brenda headed west. He is now a patent attorney with California Research Corporation in San Francisco and a member of the California Bar. Roger is also active in the M.I.T. Club of Northern California. . . . **John Blackmer** is with Space Technology Labs in Los Angeles. . . . **Mary Bronson** has become Mrs. Pyle and now resides in Brookline. . . . **Paul Brown** wed Sallie Ann Johnson of Newton in February. Paul has received his doctorate from Tech and is now a research associate. . . . **Capt. John Clark** is with the First Weather Detachment, 11th Weather Squadron at Ladd AFB, Fairbanks, Alaska. While stationed at Almagordo John had the misfortune to live on Alaska Street and apparently was "reassigned by association." . . . **Ted deWinter** is working at the Avco-Everett Research Lab. . . . **Dr. Russell Hobbie** is at the School of Physics of the University of Minnesota. . . . **Harvey Levine** is now a professional engineer in New Jersey, working for RCA. . . . **Bob Northrup** is working on his doctorate in physiology at the University of Connecticut. He has been doing research on the mechanical properties of muscles. . . . **Thomas Yonker** has left AiResearch Manufacturing Company in Phoenix and has joined the Industrial Liaison Office at Tech. . . . Now, back to the ivory tower.—**Bruce B. Bredehoff**, Secretary, 1094 Center Street, Newton Center 59, Mass.; **M. Philip Bryden**, As-

sistant Secretary, Apt. 207, 3521 Durocher Street, Montreal 18, P.Q., Canada.

'57

Jim Pearson is currently working for his Ph.D. in Mathematics at New York University having received his M.S. in Mathematics there last October. Jim is also doing research in plasma physics at the Picatinny Arsenal in Dover, N.J. . . . **Bob Nease** is with Ford as manager, Systems Integration, Lunar Systems, Aeronutronic Division. . . . **Ron Enstrom**, **Stan Gelles** and **Alan Wolff**, all metallurgists, are with Nuclear Metals Inc., Concord, Mass. . . . **Bob Ferran** is a project engineer in the Research and Development Group at Technology Instrument Corporation, Acton, Mass. . . . **Morton Rosenstein** is with Ionics, Inc., in Cambridge. . . . Last February a new firm, Metalonics Corporation, was formed by M.I.T. people with **Frank Yans** and **Alan Donaldson** as vice-presidents. Houlder Hudgins, Professor of Industrial Management at Tech, is chairman of the board. . . . **Lt. Art Prentiss** is stationed at Fort Belvoir.

I have recently seen a progress report of the 1961 Alumni Fund drive as of January 31. The Class of 1957 stands out in two respects: (1) As of that date no other class in the 1954 to 1950 group had a larger percentage of its class participating in the Alumni Fund, which is something to be proud of. (2) On the other hand only the Class of 1960 (the most recent graduates) had a lower average contribution per contributor than the Class of 1957. Contributions per man averaged 45 per cent greater for the Class of 1955 than for the Class of 1957, and 36 per cent greater for the Class of 1959 than for the Class of 1957.—**Alan M. May**, Secretary, 525 East 81st Street, New York 28, N.Y.; **Martin R. Forsberg**, Assistant Secretary, 11 Scottsfield Road, Allston 34, Mass.

'58

As I write these notes each month I am struck with the tremendous vitality and diversity within our class. In the three years since graduation we have branched out in many directions—education, theology, etc. Many of us have also assumed family responsibilities. There is little doubt that the pattern of each of our lives has changed significantly in this time. The progress and activities of each person in the class is interesting and meaningful to the rest of us, since we all are at similar stages in the development of our lives and careers. Therefore, let's begin to use this space in the Technology Review to its best advantage—as a medium for the exchange of our experiences.

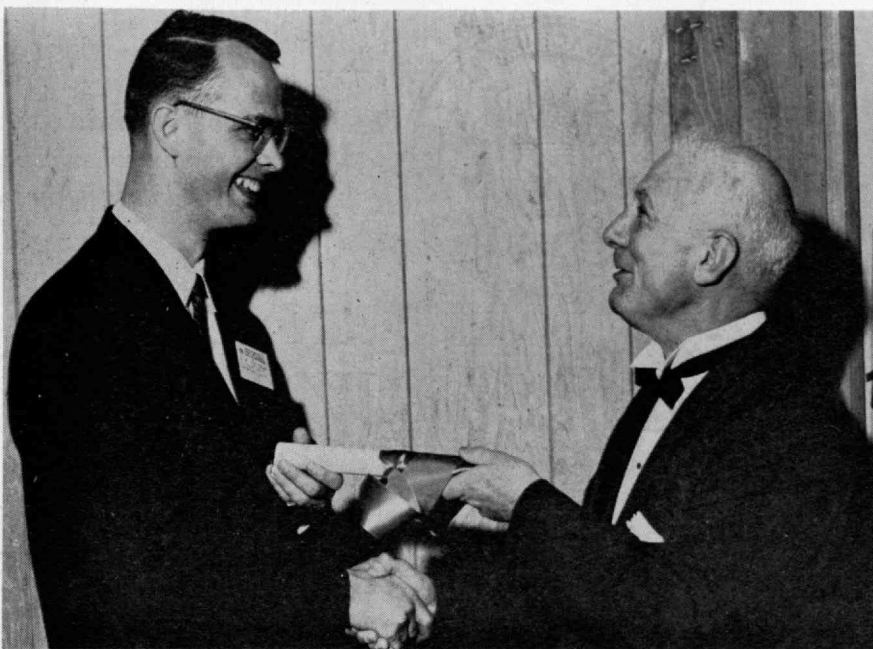
Taking the elevator in the Sloan Building last week, I bumped into **Mike Brose** who is involved in his master's degree in the School of Industrial Management. Mike told me about the interesting thesis arrangement he has with a semi-con-

ductor manufacturer who is underwriting his nationwide market research program. Sounds like pretty good salesmanship, Mike. He returned last September from two years with the Electric Boat Division of General Dynamics, where he participated in the Polaris program. Mike and his wife, the former Gene Elaine Zuk, are living in Cambridge. . . . **Bill Daly** has been an excellent source of information this issue. He joined the Systems Design Department at Honeywell Datamatic after receiving a master's degree in EE at M.I.T. He told me about **Tom Bond**, who will be one of the first members of the class of '58 to receive a Ph.D. degree. Tom expects to graduate from the chemistry department at the University of Southern California at Berkeley in September. I understand that the work Tom did on his thesis made significant contributions to his field of specialization. After a stint in the Army, Tom would like to join the faculty at Harvard. . . . Another Ph.D. candidate who will receive his degree within the minimum time requirement, is **George Bienkowski**. He is a member of the Aeronautical Engineering Department at M.I.T. Congratulations to you both.

Harry Andrews is working for Kordite in Rochester, N.Y., and living with his sizable menagerie of two children, one cat and one dog, plus, of course, his charming wife. . . . **Chuck Vicary**, married last Christmas, has already reached a high rung on the success ladder. He is the president of one of his dad's companies. . . . **John Irwin** has settled into the agricultural environment of Cornell to get his Ph.D. in physics. He finds that Ithaca has many advantages over Cambridge. I wonder if one of them couldn't be his fiancée, Ilene Sanders. . . . The most recent class marriage is that of **Ed Macho** and Carol Jo Byrnes, which took place in the Harvard Chapel March 11, 1961. Marriage does not seem to be interfering with their educational pursuits. Ed is at the Harvard Business School and Carol is working for her master's degree in Drama at Tufts. . . . **Richie Johnson**, one time terror of the lacrosse field, is now at Union Theological Seminary in New York. . . . The largest family reported so far is that of **Al Russell**, who with his wife and three children is living in Phoenix. Can anybody top that? . . . **Dick Hughes** was last seen working on the administrative staff at Colgate. Someone else told me that he is now out on the West Coast. Anybody know where he is? . . . The final item of this column concerns **Murray Kohlman**. Murray decided to take a big step last year by going to Israel to become a Rabbi, and is currently in Jerusalem.—**Cornelius Peterson**, Secretary, 301 Allston Street, Brookline 46, Mass.

NEXT MONTH, *The Review* will bring you further reports on significant events arranged for M.I.T.'s Centennial Year.

Some of the M.I.T. Men in the News



DOUGLAS W. FUERSTENAU, '53, received the Rossiter W. Raymond Award from Professor Antoine M. Gaudin of M.I.T. at the St. Louis meeting of the American Institute of Mining, Metallurgical, and Petroleum Engineers. Dr. Fuerstenau, Associate Professor of Metallurgy at the University of California in Berkeley, gave the outstanding published technical paper at the convention, and Professor Gaudin was the Lecturer of the Extractive Metallurgy Division at the meeting.



BRIGADIER GENERAL Alvin C. Welling, '38, Commander, CEBMCO (Corps of Engineers Ballistic Missile Construction Office), here presents the new CEBMCO pin to Lieutenant Colonel Clifton H. Chamberlain, Jr. This pin is worn by Army Engineer personnel working on construction of ICBM operational bases across the nation. General Welling was recently named as deputy for site activation in the Ballistic Systems Division of the newly-organized Air Force Systems Command.



and the prophet replied:

*"It is well to give when asked, but it is better to give unasked, through understanding." **

Gifts by Will

TO THE

Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it better to give unasked, through understanding;
And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;
Therefore give now, that the season of giving may be yours and not your inheritors."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and protect his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plans for the future may go awry. Hence the prophet's importuning, "—give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, "it is well to give when asked, but it is better to give unasked, through understanding."

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

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* The "Prophet" by Kahlil Gibran

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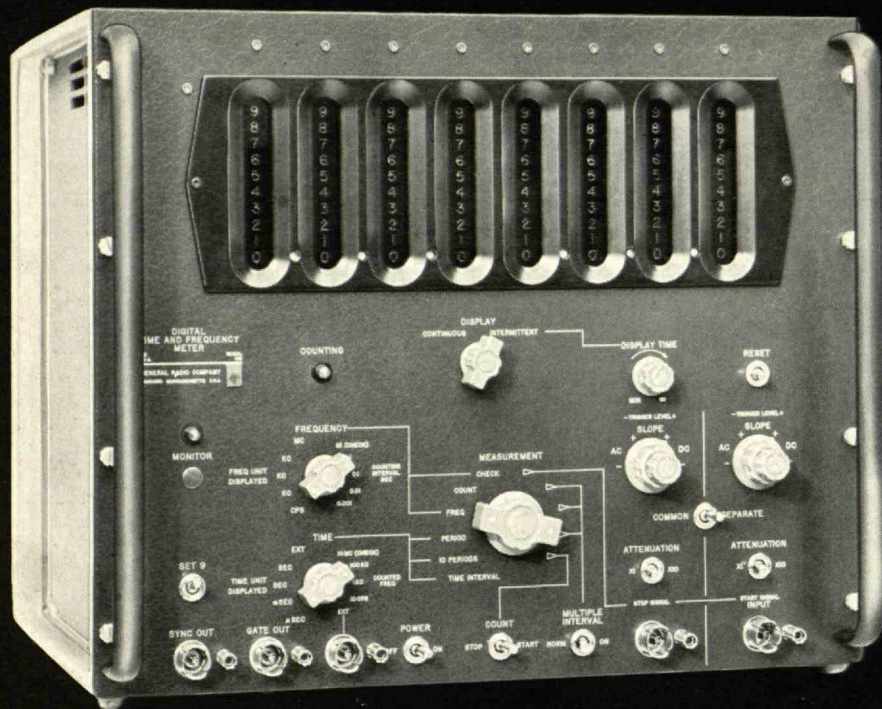
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3. Use of proven "hard-bottoming" multivibrator dividers that make for exceptional stability — eliminate need for periodic adjustments of time-base circuits.
4. Elimination of critical voltages. Neither plate nor filament supplies are, or need be, regulated.

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